Francis Hargrave

GEOGRAPHY REFORMED:

A NEW SYSTEM of GENERAL GEOGRAPHY,

According to an ACCURATE
ANALYSIS of the SCIENCE,
Augmented with SEVERAL
Neceſſary Branches omitted by former Authors.

In FOUR PARTS.

I. OF the *Nature* and *Principles* of GEOGRAPAY; its antient and preſent State in all Nations; its Uſefulneſs, and the Method of ſtudying it; with its Analyſis or Diviſion into Species, according to former Authors, and a new Plan, ſhewing the Errors and Defects of former Plans.

II. Of MATHEMATICAL GEOGRAPHY and its Branches, Aſtronomical and Geometrical: Shewing the ſeveral Diviſions of the Earth by Regions, Hemiſpheres, Zones, Climates, Meridians and Parallels, *&c.*

III. HISTORICAL Geography and its Species, Natural; Civil; Eccleſiaſtical; National; Periodical, *antient*, *middle*, *modern*; Parallel, and Critical.

IV. Of TECHNICAL GEOGRAPHY and its Branches: Repreſentatory, by *Globes* and *Maps*; Synoptical, by *Tables*; and explanatory, by *Syſtems* and *Dictionaries*.

Under each BRANCH is given
An Account of its OBJECT and USE, an Explanation of the *Terms*, the Hiſtory of its *Riſe* and *Progreſs*, with RULES for exhibiting it to the beſt Advantage.

THE WHOLE
Illuſtrated with NOTES and REFERENCES to the *principal Geographers*, whoſe different Sentiments are *cited* and *examin'd*.

DESIGNED
For the Uſe of the CURIOUS *in general, and* STUDENTS *in particular.*

There is ADDED
A copious INDEX of the TERMS contained in the WORK, anſwering the End of a DICTIONARY of General Geography.

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MVSEVM
BRITANNICVM

PREFACE.

CONSIDERING the great Number of Books already extant relating to Geography, *one would be apt to imagine the Subject quite exhauſted, and that there was no Room left for improving it: But every one, who is the leaſt acquainted with this Science, knows that our beſt Deſcriptions of the Earth are exceedingly erroneous as well as defective; and, if we examine into the State of general* Geography, *we ſhall find it as imperfect, perhaps, in its Kind, as the ſpecial.*

The Principles, 'tis true, of Geography, *have been ſettled many Ages ago. Every Body knows how far* Mathematics *and* Hiſtory *enter into this Science, and many Authors have written, with great Learning and Judgment, on all the fundamental Parts thereof; ſo that little more was to be added to their Endeavours that way. But all this while Things were handled in much Confuſion, and even ſe-*

veral eſſential Parts remained, as it were, undiſcover'd, for want of a proper Analyſis, or Method of treating the Science.

The Modern Geographers *were ſoon ſenſible of the firſt of theſe Inconveniencies, and, by endeavouring to ſtrike out Plans to remedy it, now and then brought to Light ſome Branch belonging to the Science, unthought of before. But as no one was pleaſed with another's Scheme, it ſoon produced a Multitude of diſcording Analyſes: They were not ſo much as agreed whether they had beſt proceed by a Diviſion of the Science into Species, or a methodical Arrangement of the Matters; and as their Attempts in the firſt Kind have not been very ſucceſsful, this Uncertainty ſtill ſubſiſts among them.*

The Misfortune is, that Sanſon *having ſtruck out a new Analyſis of* Geography *in the ſcientifical Form, much more regular and ample than any before, the* Geographers *ſeeming to think it ſo perfect in its Kind, as to be capable of no Improvement, ceaſed making any farther Attempts that way.*

However, it is obvious to any one, who compares his Plan with what is diſplay'd in the following ſheets, that it is very far from being perfect, he having omitted ſeveral of the moſt eſſential Species of Geography; *and as by that Omiſſion the* ſpecific *Diviſion, under his Analyſis, offers no greater Advantages,* *in treating of* Geography *than the* real, *or only treats of the ſame Things in a ſomewhat different Method, it may ſeem doubtful which deſerves the Preference: Whereas, from the Analyſis given by us, the* ſpecific *Diviſion plainly appears to be the beſt of the two, as it carries one to the Conſideration of many Things that cannot come within the* real *Diviſion, which has no Regard to the Subjects of the Relative and Comparative Claſſes. Conſidering, therefore, that general* Geography *muſt always remain imperfect ſo long as that Author's Analyſis ſhould be deem'd compleat, I thought it might not be Labour ill beſtow'd to point out its Defects, and ſupply them.*

Sanſon, *like the reſt who attempted a ſcientifical Diviſion, failed of ſtriking out an exact Plan, for want of carrying it on in a regular Manner, and making the neceſſary Diſtinctions, without which one can never ſucceed in a Work of this Nature. It muſt be own'd that Inveſtigations of this Kind are very difficult, and ſometimes a ſingle Diſtinction, on which the Knowledge of a Science chiefly depends, may be overlooked for Ages together by the Learned.* How comes it, *ſays Dr* Bernard[*], that Philoſophers have been ſo long in the Dark about Optics, but becauſe they did not diſtinguiſh Motion from its Determination? *tho' in effect they are one and the ſame Thing.*

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[*] Bernard. Orat. inauguralis de Philoſ. utilit. ap. Mem. Lit. Vol. 5. p. 17.

It is not eaſy to hit the true Road to a Place, when bewilder'd with many other Paths: And I muſt confeſs that, however natural and eaſy my Analyſis may ſeem, I was a long Time before I fell into it, deviating ſometimes into one Author's Plan, ſometimes into another's; at other times carried away with the old receiv'd Terms, or introducing new Species, which, after being look'd on for a good while as neceſſary, were at length rejected as improper. And after all I ſhall not preſume to ſay that the Analyſis is unexceptionable: For Inſtance, ſome may think National Geography might have been more properly divided into Contemporary *and* Periodical; *and this may really be the Caſe: However, for the general, I am of Opinion that the Diviſion is juſt, and that, if it be not altogether exact, it may be eaſily ſet right and perfected by the Application of others.*

The having augmented General Geography, *with an Addition of near as many Species as it had before, may apologize for our increaſing the Number of Books on this Subject; we even flatter ourſelves that, without ſuch Improvement, the Work would not be unacceptable, conſidering the Compaſs we have given it, and our Manner of handling Matters.*

For, firſt, *inſtead of confining our Enquiries to the* Geography *of our own Nation, we have extended them to that of all Nations,* *whoſe* Geography *we are any way acquainted with, and ſhewn how far each has improved it.* Secondly, *in treating of* Matters, *we have not been content to give the moſt receiv'd Opinion, or that which pleaſed us beſt: But wherever the* Geographers *have differ'd, with reſpect to any Point of Moment, we have produced their various Conjectures or Determinations, that the Reader himſelf may judge of their Accuracy, and ſee the gradual Improvements of the Science.* Thirdly, *we have given the Hiſtory of every Species of* Geography, *as well as* Geography *itſelf, ſhewing its Riſe and Progreſs in all Nations, ſo far as we are able.*

Theſe are three *Articles which the* Geographers *hitherto have not touched upon, or but very ſlightly, excepting* Riccioli; *tho' what this Author has done, with regard to giving* the Hiſtory, *reſpects only* Geography *in general, and ſome particular Things, as the Longitude, Climate,* &c. *and not the ſpecific Branches of* Geography, *he having follow'd another Method of treating thereof. I might further obſerve, that the Index I have added is ſo complete, that it may ſerve for a Dictionary of General Geography, or at leaſt may afford a tolerable Foundation for one.*

BOOKS *printed for* E. CAVE *at St.* John's *Gate.*

I. THE Rudiments of Geography, from the *French* of *M. Maupertuis.*

II. Travels into the Inland Parts of *Africa*; Containing a Deſcription of the ſeveral Nations for the Space of ſix hundred Miles up the River *Gambia*; their Trade, Habits, Cuſtoms, Language, Manners, Religion and Government; the Power, Diſpoſition and Characters of ſome Negro Princes; with a particular Account of JOB BEN SOLOMON, a *Pholey*, who in the Year 1733 was in *England*, and known by the Name of the *African.* Being the Journal, *&c.* of FRANCIS MOORE, Factor ſeveral Years to the Royal *African* Company of *England.* To which he has added, Capt. *Stibbs's* Voyage up the *Gambia* in the Year 1723, to make Diſcoveries; and Obſervations on the Captain's Remarks and Conduct. Alſo an accurate *Map* of that River taken on the ſpot; and the Soundings for 503 Miles, by Mr *John Leach*; with *ten more Copper Plates* engraved by very good Hands, *viz.* Proſpects and Plans of the *African* Company's Fort on *Jamey* Iſland, and of a Factory; a Draught of the ſtrange Situation of a *Pholey* Town, Figures of uncommon Birds and Inſects, Repreſentation of a Negro Prince on Horſeback, and of the Method of climbing the Palm-Tree to extract the Wine. The Author has likewiſe, to compleat his Subject, given Extracts from the *Nubian's* Geography, LEO the *African*, and other Authors antient and modern, concerning the *Niger Nile*, or *Gambia*, and this Part of *Africa*, with Obſervations thereon; and a Vocabulary, *Engliſh* and *Mundingo*, the Language moſt uſed by the Negroes. The Work concludes with an Appendix containing. 1. His Contract with the *African* Company. 2. Several Letters, Papers and Inſtructions relating to the Company's Commerce, particularly the Gum Trade. 3. The Voyage of an Adventurer, who found, and deſcribes the Way to the Gold Mines up the *Gambia.* To the whole is prefixt a Letter to the Publiſher, being a learned and critical Introduction to the honeſt *Factor's* plain Narrative. *pr. 6s. bound.*

III. The natural Hiſtory of Mount VESUVIUS, with the Explanation of the various Phenomena that uſually attend the Eruptions of this celebrated Volcano. Tranſlated from the original *Italian*, compos'd by the Royal Academy of Sciences at *Naples*, by Order of the King of the *Two Sicilies.* price 2*s.* ſtitch'd.

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GEOGRAPHY REFORMED:

OR, A

New INTRODUCTION to that SCIENCE.

PART I. BOOK I.

CHAP. I.

Of the different Acceptations, Definitions and Distinctions of GEOGRAPHY.

Term Etymology. GEOGRAPHY signifies simply *a Description of the Earth.* The Term comes Originally from the *Greeks,* who call it, γεωγραφία, a Word compounded of γέα (*A*), the Earth, and γράφειν, to write or describe. The Name hath been adopted, with some small Variation, by all Nations who have cultivated the *Grecian* Learning, the *Latins* write it *Geographia,* the *Spaniard Geografia,* the *Italians la Geografia,* the *French la Geographie,* the *Germans Geographie,* the (a) *Arabs* and *Persians Jagbrafiah* and *Jarafiah.*

(a) See *D'Herb. Biblioth. Orient.* Art. *Giarafiah* and *Giagrafiah.*

(*A*) Some derive the Word from γῆ: *Labbe* (*a*) from γαῖα; both signifying the Earth as well as γέα: but it is deduced more regularly from the last.

(*a*) *Labbe, Geographie Royale,* p. 1.

Significations.] This Term admits of two Senſes, a literal one as above, and a technical.

Literal.] In the literal Senſe it is apply'd to any literary Performance, which exhibits, or treats of the ſeveral Parts of the Earth.

Technical.] But in its Technical Meaning, it denotes a Science, or Syſtem of Doctrines contrived for forming and regulating the Deſcription.

Various.] The Term is alſo apply'd figuratively to both in various Senſes; as,

Firſt, To denote any Species or Branch belonging to the Science: Thus, We ſay, Aſtronomical Geography, Natural Geography, Civil, Modern, &c. Geography, transferring the Name of the Whole to the Part.

Secondly, It is apply'd to the Deſcription; either as it relates to any particular Nation: So we ſay, the Geography of the *Greeks*, *Romans*, *Arabs*, *Chineſe*, *Engliſh*, *French*, &c. or elſe as the Work of ſome Author, in which Senſe we ſay *Ptolomy*'s Geography, *Sanſon*'s Geography; the Geography of *Cluverius*, *Morden*. But it muſt be obſerv'd that by this Term, here, muſt be underſtood a Book or Treatiſe; it being rarely, if ever, apply'd to Globes, or Maps, tho' they have the beſt Title to it: ſo that we never hear of the Geography of *de Wit*, *Berry*, or *de l'Iſle*, meaning the Globes or Maps of thoſe Authors, altho' they themſelves are called Geographers.

The Word is alſo apply'd to the Deſcription of any Part of the Earth; ſo we ſay, the Geography of *Europe*, the Geography of *Spain*, the Geography of *Jamaica*; in which Senſe it is ſynonymous with *Chorography*.

Diſtinctions.] In Geography we muſt diſtinguiſh two Things; the Art or Science, and the Reſult or Deſcription.

SECT. I.

GEOGRAPHY *conſidered as a* SCIENCE.

GEOGRAPHY conſider'd as a Science may be defined, ſimply, *the Method of deſcribing the Earth.*

But Authors vary in their Definitions of it, as it is conſider'd by them in a more or leſs extended Senſe.

1. **Definition.**] Geography, according to ſome, teaches how to deſcribe the *Terr-aqu-ign-aerial* (a), or *Terr-aqu-aerial* (b) Globe.

(a) Buſſing, Math. Univ. Tab. (b) Liebknecht, Elem. Geogr. Gen. Scheuchzer, Enchir. Math. p. 23. Juncker, Lin. Prim. Erudit. part. 2. p. 183.

Globe: That is, the Globe of the Earth, conſiſting of Land and Water, with its Appendages, the Fire, Air, and Atmoſphere. The Terms *Terr-aqu-ign-aerial* and *Terr-aqu-aerial*, (which, tho' differing ſomewhat, are of the ſame Import) have been of late invented by the *Germans*, who particularly cultivate this Sort of Geography. But theſe Definitions are not juſt, on two Accounts: Firſt, as they include the Conſideration of the Elements, which are no Part of the Object of Geography, as will be ſhewn hereafter. Secondly, in that they reſtrain the Deſcription to the Explanatory Kind only; for Fire and Air cannot be exhibited by Globes and Maps.

2. **Definition.**] Others define it a Science which teaches the Deſcription of the whole Earth, or terraqueous Globe (a), or more explicitly, of the exterior Part of the Earthly Globe, as compoſed of Land and Water (b)(*A*); which Definition we prefer.

3. **Defin.**] Some define Geography to be, 1ſt, a Deſcription of the (c) Terreſtrial, (d) or Terraqueous Globe; others, 2d, a Deſcription of the Earth, underſtood by ſome, 3d, of the whole Earth, or Globe, by ſome, 4th, of the Earth ſeparately from the Waters (e) (*B*): and the Antients reſtraining the Term ſtill farther, generally define it, 5th, a Deſcription of the known, or habitable Earth. (f)

But the Definitions of this Claſs are all erroneous, for they in general confound the literal, with the technical Senſe of the Word; or the Science, with the Deſcription itſelf: beſides the two laſt are on another Account incompatible with Geography, as a Science, which has in View the Deſcription of the whole Globe, without regarding how much of it is known, or unknown.

(a) *Carpent.* Geogr. p. 1. *Pemble* Brief Introd. (b) *Gordon* Geogr. Gram. p. 2. (c) Sanſon Introd. a la Geogr. Part 2. p. 98. (d) See Atlas Geogr. Vol. 1. p. 2. (e) Vid. Varen. Geogr. Gen. p. 1. (f) Ptol. Geogr. L. I. C. 1.

(*A*) Geography, according to *Alſtedius*, is a Science which treats of the Dimenſions of the terreſtrial Globe (*a*); and *Varenius* ſays it is called a mixt Mathematical Science, which treats of the Affections of the Earth, and its Parts, depending on Quantity. (*b*)

(*B*) M. *J. N. de l'Iſle* defines Geography to be the Knowledge of the different Parts of the Earth, diſtinguiſh'd into Empires, Kingdoms, and other Dominions (*c*): and accordingly his Treatiſe of *Geography*, written by way of Queſtion and Anſwer, for the Uſe of the late young *Ruſſian* Monarch, conſiſts wholly of the Civil Diviſion of the Earth; a poor, inconſiderable Performance, very undeſerving of the Name of a Treatiſe of Geography.

(*a*) Alſted. Encycl. Tom. 1. p. 35. (*b*) Varen. Geogr. Gen. p. 1. (*c*) La Geographie ap. Abreg. Math. pour Uſage Emp. Ruſſ. Tom. 2. p. 54.

Ptolomy himſelf falls into this Error, in defining *Geography* to be *the Imitation of a Picture, exhibiting ſo much of the Earth as is known; together with thoſe Things which concern a general Knowledge of it* (a). Which Definition is faulty in two Reſpects; firſt, As the Term is apply'd to the Deſcription, not the Science, in ſaying, 'tis *the Imitation of a Picture exhibiting the known Earth*; Secondly, in making it eſſential to Geography, to touch on only the moſt remarkable Matters, and not to enter into Particulars. For tho' a Geographer ought to avoid being too minute, and thereby over voluminous in his Work, yet it would be very ſtrange to imagine that it ſhould be leſs a Syſtem of Geography on that Account. Beſides, as the Imitation of a Picture of the Earth preſuppoſes a Picture of it, and *Ptolomy* gives the Name of Geography to the firſt, what muſt the laſt be called? Or if the Imitation deſerves that Name, how much more the Thing imitated!

Diſtinction.] Geography is a Branch of Coſmography, from which it differs as a Part from the Whole; and from Chorography and Topography, as the Whole from its Part.

Ptolomy makes Chorography a diſtinct Science, or rather Manner of Deſcription, from Geography. Hence poſſibly aroſe the Diſtinction, *Ubi Geographus deſinit, ibi Chorographus incipit* (b) (*A*).

Spa

(a) Ptol. Geogr. l. 1. c. 1. (b) Alſted. Encycl. Vol. I. p. 528. See Carpent. Geogr. Defin. p. 4.

(*A*) According to *Ptolomy* Chorography differs from Geography, not only with regard to the Quantity of the Earth deſcrib'd, but alſo the Quality of the Deſcription. For, whereas, Geography gives a more general View of the whole Earth, and conſiders only the more remarkable Bays, Cities, Nations, and Rivers; Chorography, dividing the Earth into Parts, conſiders each independently of the reſt, and takes in the minuteſt Particulars, as the leſſer Branches of Rivers, Ports, Villages and People: He farther obſerves, that Chorography is converſant about the Qualities of Places, rather than Quantities or Dimenſions: That it is more concern'd in repreſenting the Nature of the Soil and Inhabitants, than the Proportion, Diſtance, or Poſition of Countries, either with reſpect to one another or the Heavens; which are the peculiar Province of Geography. That the Geographer, like the Deſigner who draws a whole Head, contents himſelf with sketching the Out-lines, Geography being exhibited ſolely by Points, Lines and Figures. The Chorographer, on the contrary, like the Painter who draws a ſingle Ear or Eye, takes in the minuteſt Conſiderations. Whence he concludes that Geography depends on Painting, not Mathematics. And hence he defines Geography to be *an Imitation of the Picture of the Earth, ſo far as known*, thereby intimating as

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Synonym.] But, however juſt and requiſite theſe Diſtinctions are, yet Cuſtom has confounded them. Among the older modern Writers, Coſmography has been often identified with Geography (a), as appears by the many Treatiſes, which, tho' merely Geographical, have been intitled Coſmographies. And we uſually ſay, the Geography of *Europe* or *Gr. Britain*, inſtead of the Chorography of them; as has already been obſerved.

Conringius ſays, that if Regard be had to the prime Signification of the Word, Geography is Geometry (b). But, according to the technical Signification, it is rather Aſtronomy, ſince it takes its Form principally from thence; and the Situations of Places, which are beſt adjuſted according to their Meridians and Parallels, are determined by the Meaſure of the Heavens, and not of the Earth.

Calmet (c) and *Boecler* (d) make Geography (or, as the latter explains it, the Hiſtory of the different Places of the Earth) one of the Diviſions or Parts of Hiſtory. But theſe Authors ſeem to have a wrong Conception of Geography, which, as a Science, has no Relation to Hiſtory more than Aſtronomy.

Of the Object *and* Principles *of* GEOGRAPHY.

IN the Science of Geography we muſt conſider two Things; the Object thereof, and the Principles whereon it is grounded.

(a) Vid. Alſted. Encycl. Vol. I. p. 528, and Magin. Comment. Geogr. Ptol. p. 2. (b) Conring. Epiſt. 59. p. 402. (c) Calm. Bibl. Sacra, ap. Vol. III. Dict. Bibl. p. 272. Edit. Engl. (d) Boecl. Bibliogr. critic. ap. Mem. de Trev. Tom. 66. p. 897.

if Chorography was the Picture itſelf (*a*). And hence we preſume ſome of the Moderns have defin'd it a Picture (*b*).

According therefore to *Ptolomy*, Mathematics ſhould be totally excluded from *Chorography*; nor ſhould Surveys and Aſtronomical Obſervations ever be employ'd in the Deſcription, only when it enter'd into the Compoſition of a Body of Geography. By this Rule therefore, a Map of a ſingle Kingdom, as *Spain*, muſt not be drawn with Meridians and Parallels, nor the Situation of Places marked in a written Deſcription of that Country, according either to Longitude and Latitude, or Bearing and Diſtance. But this ſurely can never be the Caſe, even ſuppoſing by *Chorography* he means what we underſtand by *Topography*: For what, indeed, is his own, or any other *Geography*, but a Collection of Chorographies, compoſed from a Combination of particular Places, whoſe Poſitions have been determined mathematically? And why ſhould they be deprived of ſo eſſential a Part, which they had originally independent of ſuch Combination?

(*a*) Vid. Ptol. Geogr. l. 1. c. 1. (*b*) Alſted. Encycl. Tom. 1. p. 528.

Object.] 1. The Object of *Geography*, or the Thing to be deſcribed, is the Earth; by which we underſtand the *whole Earth*, or *Terraqueous Globe*, conſiſting of Land and Water.

But as the Earth is alſo the Object of other Sciences, it is to be conſider'd in what Senſe it is the Object of Geography. About this there is great Diſſenſion amongſt Authors. Some, as we have already ſhewn, include together with the Earth the Conſideration of its Inhabitants and Animals; others, that of the Atmoſphere and Elements; but others more juſtly reſtrain its Object to the exterior Parts of the Earth.

The Earth, therefore, as the Object of Geography, is conſider'd by us not as an Element, for in that Senſe it belongs to *Phyſiology*: But as a ſolid Body, and chiefly as a large extended ſpherical Superficies, divided and diſtinguiſhed by Variety of Marks or Places, about which, and their Properties, Geography is ſolely converſant.

Places.] By Places here we underſtand the Parts large and ſmall, whereof the Surface of the Earth conſiſts, or into which it is diviſible, from the largeſt Continent or Ocean, Kingdom or State, to the ſmalleſt Hill, Houſe, or moſt individual Point or Spot of Ground.

Properties of Places.] The Properties of Places or Accidents, wherewith they are affected, are either Terreſtrial or Celeſtial.

Terreſtrial.] The Terreſtrial Properties are Figure, Dimenſions and Situation.

The Figure or Form of Places is various. The Dimenſions three-fold; Circumference, Length and Breadth.

The Situation of Places is likewiſe three-fold. The *firſt* Sort regards the Province and Country to which it belongs; and the particular Mountain, Plain, River or Lake whereon it ſtands: And this we call the hiſtorical Situation, a Knowledge whereof may be obtain'd barely from Hiſtory or Report. The *ſecond* Kind is that which Places have, conſider'd in reſpect of one another, whence it is called the relative or mutual Situation. The *third* Sort regards the particular Spot of the Earth where any Place ſtands independent of other Places, whence it may be called the Abſolute Situation. Of theſe two Sorts of Situations, the Abſolute is the moſt excellent, becauſe that being obtain'd, you have the Relative alſo: Whereas, the Knowledge of the Relative Situation does not make known the Abſolute.

The Whole of Geography, in effect, turns upon the Situation of Places; for what is a Repreſentation or Deſcription of the Earth, but a Combination of Situations exhibited to View?

What are the Figure and Dimenſions of Countries, but the Reſult of particular Situations?

Celeſtial.] The Celeſtial Properties or Affections are, the Riſing and Setting of the Stars, Viciſſitudes of Light and Darkneſs, Length of Days and Nights, Variety of Shadows, Cold and Heat, Seaſons of the Year, and other Phænomena.

Principles of Geography.]

2. The Principles of Geography, according to ſome, are Mathematics and Hiſtory; according to others, Mathematics only; which laſt Opinion of the two is certainly moſt juſt: For Hiſtory contributes nothing towards forming the Science; all its Uſe being to furniſh Materials for compoſing the Deſcription.

By Hiſtory here we underſtand, with *Ptolomy* (a), the Hiſtory or Relations of Travels, and other Regiſters, from whence the Itinerary Diſtances, and celeſtial Obſervations, as well as a Notitia of the different Parts of the Earth, may be gathered: And not natural and civil Hiſtory, as do the Generality of Authors; excepting ſo far as may relate to the Purpoſes of Geography already ſpecified. The Moderns ſeem to be led into the Notion, either by miſtaking *Ptolomy*, or from the Authority of *Strabo* and others among the Antients, who introduced Hiſtory of both Sorts into their Syſtems, not conſidering, that neither the Fire, Air, nor Animals, are conſtituent Parts of the Globe like the Water; nor can they be brought under a local Repreſentation or Deſcription by Globes and Maps, as Geography requires.

As to the Parts of Mathematics, which enter into Geography, Authors alſo vary: Some introduce Aſtronomy, Geometry, and Optics (b); others add Arithmetic (c); but as Arithmetic is only an Inſtrument in common to all the Sciences, and Optics aſſiſting to Geometry, ſolely in projecting the Planiſphere, we preſume there is no Neceſſity of putting either of them into the Number.

Certainty of Geography.]

From the Premiſſes then it appears, that the Principles whereon Geography is founded are certain, and demonſtrable, ſo far as relates to the mathematical Part; but uncertain as to the hiſtorical, which being grounded either on Experience and Obſervation, or the Teſtimony of our Senſes, wants Demonſtration; nor can they be proved by any other Means. For Science is taken either for that Knowledge, which is founded on Things highly probable; or for a certain Knowledge of Things which is gained by the Force of Argument, or the Teſtimony of Senſe; or for that Knowledge which ariſes from Demonſtration in a ſtrict Senſe, ſuch as is found in Geometry, Arithmetic, and other Mathematical Sciences; excepting Chronology and Geography; to both which the Name of Science, taken in the ſecond Senſe, doth more properly belong. (a)

(a) Vid. Ptol. Geogr. Enarrat. l. 1. c. 2. (b) Briet, Parallel. Geogr. Vet. & Nov. Part. 1. l. 1., p. 62. (c) Sanſon, Introd. a la Geogr. Part 1. l. 1. c. 1.

SECT. II.

Of GEOGRAPHY *conſider'd as a Deſcription.*

GEOGRAPHY, conſider'd as a Deſcription, may be defined—*A Deſcription of the Earth ſo far as is known.* We have already obſerv'd how improperly this Definition has been apply'd to the Science which has the whole Earth for its Object, whereas only a Part of it having hitherto been diſcover'd, no more than ſuch Part can be the Object of a Deſcription. And as ſome Nations have known more, others leſs of the Earth, as will be ſhewn hereafter, conſequently every Nation has a Geography or Deſcription peculiar to itſelf, which differs from that of other Nations, in Quantity as well as Quality.

In every Geographical Deſcription *two* Things are to be conſider'd, the Matter and Form.

The Materials of the Deſcription are Surveys and Aſtronomical Obſervations, whereby the Properties of Places, both celeſtial and terreſtrial, are determined.

The Form of deſcribing the Earth is three-fold, by Repreſentation, by Synoptical Tables, and by Explanation or Treatiſe.

Of theſe *three* Forms, the Repreſentatory only is that which ought properly to bear the Name of Geography: The other two being a Sort of auxiliary Species, deſign'd for providing Materials, and to help the Knowledge of the firſt.

Rules for compoſing a Geographical Deſcription.]

In compoſing a Geographical Work, the 8 following Rules ought to be obſerved.

1. To make Aſtronomical Obſervations of the Longitude, as well as Latitude, the Baſis.

2. To introduce Surveys with Roads thro' Countries, and Itinerary Diſtances between the Places.

3. To give the Diviſions of Countries and Places, according to the Natives: And the Names, both as they are written by the Natives and the Nation whoſe Geography is exhibited.

(a) See Varen. Geogr. Gen. Part. 1. Sect. 1. c. 1.

4. To adapt the Diviſions and Names to the Period of Time for which the Deſcription is made, and not confound the State of Things in different Periods together.

5. To cite the Authors, from whence the Obſervations, Surveys, and other Notices are taken.

The 5 foregoing Rules relate to the ſeveral Kinds of Deſcription in General, but the 3 following, concern the Repreſentatory Kinds only.

6. To mark the Places whoſe Situation is determin'd ſo as to diſtinguiſh whether it be as to Latitude, Longitude, or both.

7. To cite the Vouchers, in ſome waſte ſpace of the Globe, or Map.

8. To Specify in every particular Map, whence Longitude is reckoned.

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CHAP. II.

The Origin of Geography, *and Nations that have cultivated it.*

BEFORE we proceed farther in our Deſign, it may not be amiſs, to give ſome account of the Origin, and Progreſs, Uſefulneſs and Method of Studying Geography. And firſt, of its Origin and Progreſs.

SECT. I.

The Origin of Geography.

Origin] THE Invention of Geography, ſeems to be aſcribed by the *Greeks*, to the *Egyptians*, ſince it is acknowledged they firſt meaſured the Earth, and Heavens, as well as made Maps. (a)

A late learned Author makes Geography to have taken its Riſe from the Maps left by *Seſoſtris*, the *Egyptian* Conqueror, amongſt the *Colchians*; (b) but ſeems to overthrow his own Opinion, by making him contemporary with *Jeroboam*, and conſequently many Ages later than *Moſes* and *Joſhua*, who actually cauſed a Book of Geography to be written.

The *Babylonians* diſputed the Honour of theſe Things with the *Egyptians*, aſcribing the Invention of them to *Belus*, (c) *Bel*, or *Baal*, the founder of their Nation, whom they made very antient. Nor is it likely, if they had aſtronomical Obſervati-

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(a) Achillis Tatii Comment. (b) *Newton's* Chronol. p. 217. (c) Achilles Tatius ubi ſupr.

ons of 1900 years ſtanding at the time of *Alexander's* Conqueſt, that they were ignorant of Geography, which muſt naturally have preceded it.

But both theſe Nations muſt yield to the *Chineſe*, if any credit may be given to their Records: for the Book *Shu-king*, aſcribes the Invention of Geography to the Emperor *Yu* 2207 years before Chriſt; who made an exact Survey of his Dominions, and had a Geographical Deſcription thereof expreſs'd on nine copper Veſſels, anſwering to the number of Provinces, into which he divided *China*. (a)

From the firſt Inventors, whoever they were, Geography paſſed to other Nations; the *Jews* had theirs, doubtleſs, either from the *Babylonians*, or *Egyptians*, in whoſe Learning *Moſes* is obſerved to have been ſkill'd. The *Greeks*, probably had theirs from the ſame Nations, whom their Philoſophers viſited, for their Improvement in the Sciences; the *Romans*, *Arabs*, *Perſians*, *Tartars*, and in ſhort all other Nations, who have a Scientifical Geography, derive it from the *Greeks*; except the *Chineſe*, who ſeem to have been beholden for theirs to none but themſelves.

All Nations did not cultivate Geography, at the ſame Time, nor with the ſame Succeſs: ſome began earlier ſome later; ſome improved it in one Branch, ſome another; ſome more, ſome leſs; ſome a longer others a ſhorter Space of Time; according to the various Inclinations, Abilities, or Fortune of each.

As many of the Nations, who cultivated Geography formerly, are now extinct, or have abandon'd the Care of the Sciences, we ſhall conſider them apart from the Nations which cultivate it at preſent.

SECT. II.

Of the Nations which formerly cultivated Geography, *and to what Perfection each of them brought it.*

Nations which formerly cultivated Geography.] THE Nations eminent of Old for cultivating Geography, were the *Babylonians*, *Egyptians*, *Jews*, *Perſians*, *Parthians*, *Greeks* and *Romans*: And in the middle Ages the *Arabs*, Oriental *Turks*, *Moguls* and *Tartars*, of the Eaſt and Weſt, ſignalized themſelves that Way.

Babylonians.] The *Babylonians* began in the Time of *Belus*, whenever that was; or about the Time they firſt made

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(a) Vid. Martini Sinic. Hiſt. p. 50. & P. Couplet Tab. Chronol. Mon. Sinic. p. 4.

Aſtronomical Obſervations. But it may be queſtion'd whether they brought it to any tolerable Perfection till the *Nabonaſſarean Æra*, 714 Years before Chriſt. However, it may be preſumed that the *Greeks* were beholden to them for the Aſtronomical Rudiments of it, as well as Aſtronomy itſelf, and other Sciences, which the *Babylonians* cultivated till the Deſtruction of their Monarchy by the *Perſians*: altho' it does not appear that the *Greeks* had any Obſervations of the Latitude or Longitude from them, relating to their Dominions or other Parts; ſince *Ptolomy* Places *Babylon* about one Degree and two Thirds more Northerly than it may be preſumed it ought to be from the Situation of *Bagbdad*, which lies more Northerly than it, tho' its Latitude is much leſs than that given to *Babylon*.

Egyptians.] The *Egyptians* are acknowledged to have cultivated Geography, and had Tables or Maps, as early as the Time of *Seſoſtris*; but whether they had an Aſtronomical Geography, or to what Degree they improv'd it, we know not; ſince the *Greeks* either ſuppreſs'd or attributed to themſelves the Learning of other Nations: and it is likely that they gave over the purſuit of the Sciences from the time they became ſubject to foreign Yokes; as at preſent we find them involved in the groſſeſt Ignorance under the Power of the *Turks*.

Jews] Geography began to be cultivated among the *Jews*, under *Moſes* and *Joſhua*, of which the Books written by thoſe Leaders as is commonly believed, is a Proof. But it does not appear, that the Science is beholden to them much for Improvements; that they employ'd Aſtronomy in it, or had any conſiderable Knowledge of the Earth: tho' they may be allowed all the Time from the *Exodus* till the Deſtruction of *Jeruſalem* by *Veſpaſian* for proſecuting Learning.

Antient Perſians. Geography, without doubt, was cultivated by the *Perſians*, during their ſeveral Empires. They had it probably from the *Babylonians*; indeed, how far they improved it, or whether they made any Aſtronomical Obſervations, does not appear: but we find that they and the *Parthians* kept Regiſters of the Publick Roads thro' their Dominions, for the Service of the State (a); which looks as if they had Survey'd, or at leaſt Meaſured them. They had alſo Maps, as appears by that of the World, or at leaſt of the *Perſian* Empire, which *Ariſtagoras* brought from thence (b); and another of *Manes* the Founder of the Manichean Sect (c). Of theſe Monu-

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(a) Vid. Dodw. Diſſert. de Iſid. Charac. ap. Hudſon, Geogr. Vet. Grec. Vol. 2. p. 74. (b) Vid. Herod. l. 5. (c) See D'Herbelot Bibl. Orient. Art. Giagrafiah. p. 391.

Monuments, however, none remain at preſent; having been deſtroy'd in ſome of the Revolutions that befell their Empire: Probably in that remarkable one made by the *Arabs*, who deſtroy'd all their Records, and perhaps their Libraries, as they did the Remains of the famous *Alexandrian* in *Egypt*.

Antient Greeks.

The *Greeks* began to lay the Foundation of Geography about the Time of *Homer*, who is reckon'd the firſt Geographer among them: or rather not till the Time of *Anaximander*, 550 Years before the Chriſtian *Æra*. They, after that, by degrees improved it much by applying Aſtronomy to it, with great Succeſs, as to the Theory; diſcovered the Ways of finding the Latitude and Longitude of Places, by Obſervations of the Stars, and Eclipſes; invented accurate Methods for projecting Globes and Maps, which were very common amongſt them. But in the Practical Part, they were very deficient. They made no Obſervations of the Longitude, and but few of the Latitude of Places; the greater part of which were very inaccurate, as being determined by the Length of the longeſt Day: neither had they proper Inſtruments for thoſe Purpoſes. As for their Knowledge of the Earth, it extended from the *Canary* Iſlands in the Weſt, to *China* in the Eaſt, the Eaſtern Coaſts of which were unknown to them: including according to *Ptolomy* 180° of Longitude; and from 60 Degrees of Northern Latitude, to 20 Degrees of Southern. But moſt of the Countries, without the Bounds of their Empire, were very imperfectly known to them. This was the State of the Geography of the *Greeks* in the time of *Ptolomy*: Who fixt its *ne plus ultra* among them. For afterwards it ſeems to have been at a ſtand for ſome Ages: And during the Diſtractions of the Empire, from civil Wars, and foreign Invaſions, declined daily, till the utter Deſtruction thereof, by the *Turks*; ſince when the Sciences have been the leaſt of their Care.

Romans.] The *Romans* borrow'd their Geography moſtly from the *Greeks*. It does not appear that they made any Obſervations of the Latitude or Longitude, or added any Thing to the Theory. However in the Geometrical Part they improved it vaſtly, by Meaſuring or Surveying the whole Empire, in the Time of *Julius Cæſar*, and *Auguſtus* (a); and making Roads through the ſame; a Thing which the *Greeks* never thought of. They had alſo Globes, but eſpecially Maps in great Plenty, which were much improved by their Itineraries.

(a) Vid. Æthic. Coſmog. Præf.

Arabs of the middle Ages.]

The *Arabs*, who at their firſt Setting out to conquer, after *Mohammed*'s Death, deſpiſed Learning, or at leaſt any but their own, became ſmitten, about 825, with that of their Neighbours, eſpecially the *Greeks*; whoſe Geography (with the reſt of the Sciences) they cultivated, and much improved in the Practical Part, by means of Obſervations, (chiefly of the Latitude, taken as well with the Quadrant as Gnomon) and Itineraries. They alſo invented ſeveral New Inſtruments, particularly the Quadrant; and ſome think the Mariner's Compaſs, which was in Uſe with them at leaſt latterly. But their Knowledge of the Earth extended very little beyond the Bounds of their own Empire: which at length being broken in Pieces, and confined to its Original Limits, *Arabia*, they neglected the Sciences, by degrees; ſo that at preſent Geography is but little minded by them.

Turks.] The *Turks*, ſo long as they continued in *Turkeſtan*, their Original Seat, ſeem to have been Strangers to all Learning: but as ſoon as thoſe of the Race of *Seljuk*, had made themſelves Maſters of *Perſia*, under *Toghrul Beigh*, about 1037, they took the Sciences, which then flouriſh'd in that Country, under their Protection; and continued the Improvement of them ſo long as the 3 Dynaſties of *Fars*, or proper *Perſia*, *Kerman*, and *Rum*, or *Anatolia*, held the Sovereignty. But we are as yet ignorant in what degree they advanced Geography.

Moguls and Tartars.]

The *Moguls*, and *Tartars* (*A*) having overrun the Southern Parts of *Aſia*, in the beginning of the 13th Century, cheriſh'd Learning wherever they found it: *Kublay Kaan* in *China*, *Hulaku Khan* in *Perſia*, and afterwards *Vlugh Beigh* in *Great Bukharia*, or *Tranſoxana*. Geography in particular, received conſiderable Improvement from their Obſervations of the Latitude of Places; but civil Diſtractions, and foreign Wars, which enſued, left them no leiſure to think of the Sciences, their Care for which abated as their Power declined. At length, being driven out of all which they poſſeſs'd in the lower *Aſia*, they returned to their antient Ignorance; wherein they for the moſt Part ſtill continue, excepting the *Manchew Tartars* at preſent Lords of *China*.

(*A*) The true Name of the People called by us *Tartars*, is *Tatar* or *Tattar*, as they are called not only by the *Tatars* themſelves (*a*) and other oriental Nations, but by thoſe of *Europe* to the Eaſt of *Germany*. (*b*).

(*a*) See *Abu'l Ghâzi Khân* Hiſt. Turks, Moguls and Tartars p. 7. (*b*) See P. Avarel's Travels into China p. 174.

SECT. III.

Of the Nations which cultivate Geography at preſent, and the Perfection to which each of them has brought it.

THE Nations which at preſent cultivate Geography are the *Perſians*, *Turks*, *Tartars*, and *Chineſe*, with moſt of the European.

The Sciences which had been driven out of *Perſia*, by the *Arabs* about the Year 632; began to flouriſh again 190 Years after with double Vigour, under the Encouragement of the Conquerors; ſince when they have continued to enrich Geography with many Obſervations of the Latitude, Surveys, and Itineraries. They alſo have had their Share with the *Arabs*, in contriving Inſtruments for the Uſe of Geography, and extended their Knowledge of the Earth conſiderably farther over *Tartary*, and the *Indies* than the *Arabs* had done. They have many Tables of the Latitude and Longitude of the moſt conſiderable Places of the Earth, ſo far as known to them; Maps and Geographical Syſtems, many of the latter in the Itinerary Form; like that Abridgment of *Al-Edriſi*, which goes among us by the Title of the *Nubian Geographer*.

The *Othman* or *Oſman Turks*, who driven by the *Moguls* out of *Khorazan*, a Province of *Perſia*, ſettled in *Rum*, or *Anatolia* under the *Seljukians*, out of whoſe Ruins they roſe, having taken *Conſtantinople* in 1453. fell by Degrees to cultivate the Sciences, and among the reſt, Geography. 'Tis true, they do not appear, at leaſt as yet to us, to have added many Obſervations of the Latitude, to thoſe made by the *Arabs*, and *Perſians*; But they have a more complete Knowledge of *Europe*, *Aſia*, and *Africa*; nor are they abſolute Strangers to *America* (a): They have Globes, Maps, Tables of the Latitude, and Longitude of Places, and Syſtems in Plenty: Several of which have appear'd among us of late, ſince Printing was introduced by them; eſpecially Maps, and Charts, which are as neat and beautiful, as any Engraven in *France*, or *Holland*. From whence it appears that they are not ſo ignorant in Geography, as they are commonly repreſented by Authors (b), for want of ſufficient Knowledge of their Books.

(a) See D'Herbel. Bibl. Orient. Art. Tarikh. Hend. p. 872. (b) See Dr Smyth's Account of Pruſa in Bithyn. ap. Phil. Tranſ. Vol. 1. p. 438.

The *Chineſe* began to cultivate Geography, according to their own Account, about 2207 Years before Chriſt (a); and have continued doing ſo ever ſince, with very little Interruption, whereby they have brought it to tolerable Perfection for any Single Nation: they have Meaſured, and Survey'd their Dominions at ſeveral Times, obſerved the Latitudes of the Principal Cities, and have exact Deſcriptions and Maps thereof; the Invention of the Compaſs is alſo aſcribed to them. But it does not appear that they ever apply'd Eclipſes of the Sun, or Moon, to the Uſe of Geography, before the *Europeans* arrived on their Coaſts: or employ'd any Projection in their Maps, with Meridians and Parallels; nor do they ſeem to have had any tolerable Knowledge of the Earth beyond the Bounds of *China* itſelf, which they imagined to be bigger than all the World beſides. But they begin to improve under the Influence of the *Manchew Tartars*; who having reconquer'd *China* in the laſt Century, once more became enamour'd with the Sciences: and have not a little advanced Geography, by the exact Surveys, which they have cauſed to be made of their whole Dominions, and the Neighbouring Countries of *Tartary*, under the Conduct of the Jeſuites, regulated by Aſtronomical Obſervations of the Longitude, as well as Latitude. (b)

The Improvement of Geography, which had been, as it were, quite abandon'd by the *Europeans* for 1000, or 1200 Years together, began to revive in the 15th Century: ſince which Time, they have made great Diſcoveries both by Sea and Land; determined the Situations of many of the moſt remarkable Places of the Earth, by accurate Obſervations, of the Longitude and Latitude; and made Surveys of their Reſpective Dominions. They alſo have invented ſeveral uſeful Inſtruments; improved the Methods of Projecting the Sphere, and Maps; reduced thoſe of taking the Altitude of the Stars, to exact Rules; and at length, in the laſt Age, by improving the lucky Diſcovery of the Satellites of *Jupiter*, have rendred that difficult Problem, the finding the Longitude, both exact and eaſy. They alſo determined the Content of a Degree of a great Circle not only to a greater Exactneſs than the *Greeks*, and *Arabs* had done in their Attempts, but perhaps to all the Preciſion it is capable of.

The *Maritime* Nations of *Europe* chiefly, have been concerned in theſe Improvements. The *Portugueze* found out the Way to *India* by Sea; the *Spaniards* diſcover'd the new World, or Continent called *America*; and firſt proved the Earth to be Spherical,

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(a) Vid. Martin. Hiſt. Sinic. p. 50. (b) Theſe Surveys are inſerted in *P. du Halde's* Deſcription of *China*, *Chineſe Tartary*, *Korea* and *Tibet*.

by Sailing round it: The *Engliſh* and *Dutch* ſignaliz'd themſelves by their Navigations, to the North Eaſt, and North Weſt.

The *Engliſh* and *French* have had the greateſt Share in bringing the Methods of finding the Longitude by Eclipſes of the Sun, Moon, and Satellites, to their preſent degree of Perfection; and made, or procured the greateſt Number of accurate Obſervations: they alſo determined the Content of a Degree.

Theſe are all the Nations we know of, who have cultivated Geography. And indeed excepting the *Armenians*, *Abyſſinians*, the People of *Morocco*, and ſome other Kingdoms on the *Barbary* Coaſt; the *Mexicans*, *Peruvians*, and a few other Nations of *Africa*, and *America*, the State of whoſe Geography, we are for the moſt part Strangers to, it may be preſumed all other Nations are Ignorant of it: or at leaſt that it appears amongſt them in too rude a Dreſs to be conſider'd as a Science.

SECT. IV.

The Cauſes which have contributed to the Advancement of Geography.

GEOGRAPHY owes its Advancement, much to Curioſity and the Natural Deſire of Mankind to know; but to nothing more than Wars, and Commerce.

Many Countries became known of Old, by the Wars made by the *Perſians*, in *Greece* and *Egypt*; great Part of *Aſia* as far the *Ganges* (a), and of *Europe* to the River *Iſter* [or *Danube*] was open'd to the *Greeks* by *Alexander* and his Succeſſors; the Weſtern Part of *Europe*, and from the *Iſter* to the River *Tyra*, [or *Nieſter*] alſo the Countries of *Africa* along the *Mediterranean* Sea, by the *Romans*; all the Northern part of *Europe*, by the Invaſions of the Inhabitants into the *Roman* Empire; and the Knowledge of what lies beyond the *Tyra* Eaſtward, as far as *Mæotis*, and the Coaſts of *Colchis*, came by *Mithridates Eupator*, and his Lieutenants. The *Parthians* made known the *Hyrcanians*, *Bactrians*, and *Scythians*, beyond them, more fully than they were before (b); the *Scythians* made themſelves known by their Irruptions anciently under *Indathyrſus*, (c) or *Idanthyrſus*, and other Leaders, who over-ran *Aſia*; as the *Moguls*, and *Tartars* from the ſame Quarters did of late Ages, under the great *Jenghiz Khan*, and *Timur Begh*, and the Countries of *Aſia* beyond them, as far as the Northern and Eaſtern Ocean, were made known to *Europeans* by the Conqueſt of the *Ruſſians*; as were the Inlands of *America*, by the Military Succeſſes of the *Spaniards*, *Portugueze*, and other Nations.

(a) Plin. Hiſt. Nat. lib. 6. cap. 17. (b) Strab. lib. 1. p. 24. (c) Vid. eund. lib. 15. p. 414.

Seſoſtris, the Egyptian Hero, left Tables, or Maps, for the direction of Travellers, in all the Countries which he conquer'd (a); *Alexander* carry'd Surveyors with him to *Babylon*, to ſurvey his Acquiſitions; And order'd his Admiral to diſcover the Coaſts (b). The *Romans*, on their Subduing any Country, order'd a Map of it to be drawn, which was carry'd in the Victor's Triumph (c). Thoſe Magnificent Roads, which they made throughout their Empire, were called military Ways, as being made for the conveniency of Marching their Armies; it is particularly remark'd that *Spain*, and *Italy*, were meaſured by them, on *Hanibal's* intending to penetrate thro' thoſe Countries (d); laſtly, they had Maps, expreſsly for Military Uſes, marked with the Roads and Diſtances like thoſe called the *Peutingerian* Tables, ſtill remaining.

Principally to Commerce.]

But Geography is principally indebted to Commerce, both for its Original and Improvement. It was doubtleſs a View to Trade, which produced the firſt Intercourſe amongſt Nations, (after the firſt Colonies had multiply'd, and improved the Produce of the Ground, by Manufacturies;) and gave Riſe to Travel, and Geographical Obſervations. The ſame Motives which induced the Kings of *Egypt* to order a Survey to be made of the whole Coaſt of *Africa*, cauſed thoſe of *Perſia*, to have the Ethiopic Sea and Mouth of the River *Indus* to be examined (e). The *Phenicians* made known the Ocean, beyond the Straits of *Gibraltar*, as far as *Britain*; and the *Carthaginians*, their Relations, encompaſs'd *Africa* (f): the *Greeks*, in Purſuit of Trade, ranged the *Indian* Seas: the *Romans* followed their Example; after whom the *Arabs* and *Perſians* diſcover'd more perfectly the Southern Coaſts of *Aſia*, with ſeveral Iſlands of the Oriental Ocean, as far as *China* and *Japan*, and all the Eaſtern Coaſt of *Africa*.

At length foreign Commerce which had ceaſed among the *Europeans* ever ſince the Fall of the *Roman* Empire, reviving in the 15th Century, the Maritime Nations not only recover'd their Knowledge of the Eaſtern Countries which had been loſt, and penetrated into *Tatary* and *China*, by Land; but venturing out at Sea, under the Conduct of the Compaſs, made known

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(a) Apol. Rhod, Argon. 272. (b) Plin, ubi ſupr. (c) Vid. Varen, Geogr, Gen. l, 1, c, 1, (d) Vid. Polyb. l. 3. (e) Herod, l. 4. (f) Ibid.

Eaſtward all the Coaſt of *Africa* and *Aſia,* with the Iſlands; and Sailing Weſtward, added a new Continent to foreign Diſcoveries.

However, as ſoon as the ſeveral Nations found themſelves in poſſeſſion of as much Trade, as they could conveniently manage, their Care for the Science began to ſlacken: But it appearing after all, that Navigation could not be brought to Perfection without Geography, they renew'd the Cultivation of it with great Vigour. To that End Mathematicians were ſet at Work, and large Rewards promiſed eſpecially by the *Engliſh*, *French*, and *Dutch*, for the Diſcovery of the Longitude by Sea.

But what contributed moſt to its Advancement, was the erecting Academies for cultivating the Sciences; of theſe the Chief are thoſe founded at *London* in 1660, at *Paris* in 1666, at *Berlin* in 1700, and at *Peterſburg* in 1725. 'Tis chiefly to the two Firſt that it owes its preſent Perfection, and eſpecially that of *Paris*; the principal Deſign of whoſe Inſtitution, was the Advancement of *Aſtronomy* and *Geography*; which laſt it hath greatly improved, not only by the Correſpondence, it holds with the principal Mathematicians of *Europe*, in common with the other Academies; but by ſending its Members into all Parts of the Earth, on Purpoſe to make Obſervations.

Beſides theſe Academies for the Sciences in General, there was one eſtabliſhed at *Venice*, by Pere *Coronelli*, about the Year 1685, expreſly for the Improvement of Geography, under the Name of the *Geographical Society of the* Argonauts. All the Globes and Maps of that Author were publiſhed at the Expence of this Society conſiſting of 60 Members, at the Head of whom was *Coronelli* himſelf, with his Colleague P. *Pariſotti*, Hiſtoriographer: The Symbol of the Academy, was a Globe with a Ship under Sail, with this Motto, *Plus ultra*.

Literary Hiſtory.] The Hiſtory of Geography, as of moſt other Sciences, has been treated very ſuperficially by Authors. Among the Antients, *Strabo* (b) and *Agathemeres* (c) give ſome Account of its Riſe and Progreſs, chiefly among the *Greeks*. Something that Way alſo, may be gathered out of the Fragments of *Marcian*'s Abridgment of the Geography of *Artemidorus Epheſus*.

Among the Moderns P. *Riccioli* (d), has given the Hiſtory both of Geography in General and ſeveral Parts of it. *Varenius* (e) and many others have ſlightly touched on the ſame Subject. Sir *James Mackenzie* gives alſo a ſhort Account of it (f), from ſeveral Au-

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(a) Vid. Nov. Leter. Lipſ. ad. Ann. 1719. p. 16. & Seqq. (b) Strab. l. 1. & 2. (c) Agathem. Geogr. l. 1. c. 1. (d) Ricciol. Geogr. Reform. in Proem. (e) Varen. Geogr. Gen. l. 1. c. 1. (f) Mackenz. Lives and Char. of *Scots* Writers, Vol. 1. p. 371.

Authors, but chiefly *Varenius*. Indeed Mr *Bruzen la Martiniere*, Author of the *Great Geographical Dictionary*, has expreſsly written an *Eſſay on the Origin and Progreſs of Geography* in two Parts (a); but it falls vaſtly ſhort of ſuch a Deſign: He ſays nothing material of the Origin of the Science, more than what we find in *Varenius*; nor does he purſue its Progreſs thro' the ſeveral Species, or even give the Diviſion of it: He does not ſo much as touch upon the Application of the Sphere to Geography, or the State it was in before it took the Aſtronomical Form: which he aſcribes to *Ptolomy* contrary to Fact, as we ſhall ſee hereafter. Neither does he ſpeak of the Improvements Geography has received ſince his Time, except ſomething as to the Article of Diſcoveries by Sea and Land. In ſhort, his two Eſſays conſiſt chiefly of tedious Accounts of ſome of the Antient, and Modern Geographers, and the Diſcovery of *America*; without taking any Notice of the preſent State of Geography, or entering into a critical examination of the Works of Geographers, farther than relates to Geographical Dictionaries.

Beſides *la Martiniere*, *John George Liebknecht* (b) has given the Hiſtory of Geography in its ſeveral Branches. It takes up the firſt 130 Pages of his Book, and is according to *Juncker* (for we have not ſeen it) the beſt Account of any extent (c). The Heads of this Part may be read in the *Acta Erudit. Lipſ.* (b) where a ſhort Abſtract is given of the whole Book.

CHAP. III.

Of the Uſefulneſs of GEOGRAPHY.

Utility.] GEOGRAPHY affords a Knowledge of the Surface of the Earth: It Points out the Situation of every Country; and by the Deſcription which is made of it, repreſents the vaſt Theatre, whereon the different Scenes of the World are acted: It ſerves us for a Guide when we read Hiſtorical Facts; and naturalizes us, if we may ſo expreſs it, in the Places whither our Curioſity carries us (d).

'Tis to Geography we owe our Deliverance from the Ignorance of thoſe Times, wherein Authors talked of burning the Black

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(a) Inſerted in the Mem. Hiſtoriq. & Critiq. for Oct. and Dec. 1722.

(b) Liebkn. Elem. Geogr. General. in 8° Frankf. ad Mæn. 1712.

(c) Junck. Liniæ Prim. Erudit. Part. 2. p. 182.

(d) Mem. Trev. 1717. p. 899.

Sea, becauſe they thought *Pont Euxine* ſignified the *Euxine Bridge*; imagin'd *Morea* to be the Country of the *Moors* (*A*); and that *Venice*, *Lucca*, and *Genoa*, were rich *Italian* Princeſſes. (a)

The Antients had Geography in great Eſteem. *Strabo* accounts the Knowledge of it worthy of a Philoſopher, and ſhews it was ſtudy'd by *Homer*, and many of the firſt; ſeveral of whom wrote Geographical Syſtems as well as himſelf. Emperors and Kings themſelves have Honour'd it with their Names. (b)

Geography is not only an Accompliſhment for every Gentleman, but many Perſons are by their Profeſſion, or otherwiſe Obliged to underſtand more or leſs of it: Some make it neceſſary to the Phyſician, the Poet, the Orator (c), and in ſhort to Perſons of all Degrees, and Profeſſions (d), the Learned and Unlearned (e), not excepting the Aſtronomer (f), whoſe Buſineſs ſeems to lie wholely in the Heavens.

How far juſt theſe Sentiments may be found in general, we ſhall not ſtay to enquire. Authors we know are apt to exaggerate, in recommending the Subjects which they treat of; but this we may venture to ſay with Regard to *ourſelves*, that the Thirſt after News, and the Knowledge of foreign Affairs, is become ſo Univerſal, as to make Geography in ſome Meaſure neceſſary to almoſt every *Engliſhman*.

To the Politician.]

It muſt be confeſs'd, that the Politician of any Kind, makes but an awkward Figure without ſome Knowledge of Countries; ſo that it is not without Reaſon, that Geography is always ſet down among the Qualifications proper for a Stateſman. On which Occaſion, the foreign Writers ſeldom fail to mention a Blunder (whether true or falſe it matters not) of a certain *Engliſh* Ambaſſador, who being at *Rome* in 1343, when Pope *Clement* VI. gave the Fortunate Iſlands, then lately diſcover'd by *Bethencourt* a *Frenchman*, to *Lewis* Count of *Clermont* imagin'd that the Donation related to the *Britiſh* Iſlands, inſtead of the *Canaries*, which then commonly went by that Name; whereupon he left the Court of *Rome* in great Diſcontent, and poſted in all haſte to *England*, to inform the King his Maſter thereof. (g)

(a) Vid. Martineau Nouv. Geogr. Pref. and Works of the Learned, Vol. 2. p. 580. (b) See Syſtems. (c) Cicero de Orat. l. 1. n. 60. (d) See Echard Compend. of Geogr. app. p. 233. (e) Strab. Geogr. l. 1. p. 11. (f) Echard ubi ſupr. (g) See Martineau du Pleſſis ubi ſupr. Vallem. Elem del' Hiſt. Vol. 1. p. 115.

(*A*) Tho' for this they might have had ſome Grounds. (*a*)

(*a*) Vid. Hyde Not. ad Peritſ. Itin. Mundi. p. 72.

Some carry the Neceſſity of this Study to a great Pitch: They compare thoſe to Stocks, or Stones, who ſay it may be diſpenſed with (*A*), but others inforce it by milder Arguments. (*B*)

To Poets.] We cannot ſay, but Poets may often have Occaſion for ſome Knowledge in Geography; *Homer* makes great uſe of it in his Poems, and for want of his Skill in it, ſucceeding Poets have committed enormous Miſtakes. *Ovid*, *Manilius*, and *Lucan*, if not *Virgil*, confound *Philippi*, a City of *Phthiotis* in *Theſſaly*, (not far from *Pharſalia*, where *Cæſar* overthrew *Pompey*,) with *Philippi*, a City of *Macedonia* on the River *Strimon*, where *Brutus*, and *Caſſius* were overthrown by *Antony* and *Cæſar* (a), tho' 100 Leagues aſunder. *Virgil* alſo places *Emathea*, near Mount *Hemus* (b) which is far from it, and ſays, the *Nile* runs along the Frontiers of *Perſia*, and comes from the *Indies* (c).

But after all, Geography ſeems to be uſeful chiefly to the *General*, the *Merchant*, the *Divine*, the *Hiſtorian*, and the *Traveller*.

To Generals.] The General, or Military Man, can neither ſucceſsfully invade, nor ſafely retreat out of an Enemy's Country, without knowing well the Situation of its Coaſts, Mountains, Foreſts, Roads, Paſſes, Rivers, and moſt convenient Places to encamp in.

Strabo ſays, no Commander ſhould be ignorant of the Situation of the Earth, [illegible] as to be at a loſs in any Part thereof; and produces ſeveral Inſtances, of the Miſfortunes attending the *Perſian*, *Greek*, and *Roman* Armies on that Account (d). *Craſſus* was ruined by not knowing the Country about *Charræ*, which made him truſt to the *Guidance* of the Traitor *Andronicus* (e). On the contrary, *Alexander* got the Battle of *Iſſus*, by poſting himſelf in a Strait, ſo that he could not be attacked by the whole Army of *Darius* at once.

(a) Holſt. in Steph. Byz. ad ΘΗΒΗ ap. le Clerc in Art. Crit. Part 1. Cap. 1. Sect. 1. (b) Virg. Georg. l. 1. v. 7. & Seqq. (c) Ibid. l. 4. v. 28. (d) Strab. l. 1. p. 17. (e) Plut. in Lucul. Sect. 12.

(*A*) Il n'y a que des hommes ſtupides, & auſſi peu hommes, que des troncs d'Arbres qui ſoient capable de croire qu' on puiſſe negliger la Geographie. (*a*)

(*B*) Quid eſt autem tantas orbis partes ignorare, quam in communi patria, tanquam in ignota Silva, vivere? quid eſt humanius, quam librorum ope nobiliſſimas regiones peragrari? (*b*)

(*a*) Vallemont, Elem. del' Hiſt. Vol. 1. p 120. (*b*) Hinkleman in Pref. ad al Koran.

Moſes ſent Spies to diſcover the Condition of *Canaan*, in order to invade it (a). *Auguſtus* ſent *Dionyſius*, of *Charax* in *Perſia*, into the Eaſt, to make Diſcoveries for the Information of his eldeſt Son, then going upon his *Armenian* Expedition to War againſt the *Parthians*, and *Arabs* (b). *Timûr Beigh*, the great *Tatarian* Monarch, order'd his Surveyors, to take an Exact Account of the Roads of *Georgia*, before he penetrated into that Country. (c)

The Grand *Wazîr Kupriogli*, made his Interpreter at leizure Hours, even at the Siege of *Candia*, read *Bleaw's* Atlas to him Extemporary into the *Turkiſh* Language. (d)

It is a Prime Qualification in the Kings of ſome of the *American Indians*, to know exactly their own, and the Neighbouring Countries. (e)

Vegetius, after having obſerv'd that an Army is more liable to Dangers in a March, than an Engagement, ſaith, that in order to prevent 'em, a General ought in the firſt Place, to be provided with Itineraries of all the Countries, which were the Seats of War, drawn out in ſo particular a Manner, that he might thereby know, not only the Number of Miles between Places, but alſo the Nature of the Ways; and conſider the ſhorteſt Tracts, Windings of Roads, Mountains, and Rivers, faithfully deſcribed; for which end, (ſaith he,) prudent Commanders are reported to have had Itineraries of the Countries, through which they were obliged to March, not barely written down, but alſo delineated, that they might be directed, as well by their Eyes as their Reaſon, in the Choice of their Routs (f). The *Roman* Generals, as we learn from ſome Authors, uſed to carry ſuch; and ſuch the *Peutingerian* Tables ſeem to be.

To Merchants.] The Merchant, or Trader, is informed by Geography, of the ſeveral Roads, by Land, and Sea, to all Countries; and it affords the beſt Means for making Navigation ſecure, by Determining the Situation of the Sea Coaſts. It is to this Conſideration, that Geography owes the preſent Care of the ſeveral Maritime Powers (g).

To Divines.] That Geography is neceſſary to Divines, is beyond all doubt, ſeeing one of its prime Branches is conſecrated to the Church, by the Name of Religious, Sacred, or Eccleſiaſtical Geography: Which is uſeful in explaining, or commenting on Scripture, or Treating of the Affairs of the Church.

(a) Num. 13. 3. 17. (b) Vid. Plin. Nat. Hiſt. l. 6. c. 17. (c) Shamſeddin Hiſt. of Tim. Bec. Tom 1. p. 468. (d) Smith Acc. of Conſtant. (e) See Mem. de Trev. Apr. 1723. p. 670. (f) Viget. l. 3. c. 6. (g) Vid. du Hamel Reg. Scient. Acad. Hiſt. p. 109, 236, 248, 284. and Mem. de Math. and Phyſ. del' Acad. pour l'Ann 1693. p. 364, 492.

Sulpitius Severus, and ſeveral other great Men after him, ſuppoſe the Whale which ſwallow'd *Jonas*, caſt him up in the Harbour of *Nineveh* (a), which is above 400 Miles from the Sea.

Eraſmus entering upon his Comment on the Acts, found himſelf obliged, at 50 Years of Age, to ſtudy the Maps. 'Tis no wonder then, if beginning ſo late he hath ſometimes fallen into Miſtakes: but as for thoſe relating to *Reggio*, and *Malta*, attributed to him, by *le Clerc* (b), a certain Author makes it appear that *le Clerc* has miſtaken *Eraſmus*. (c)

Calvin confounds *Stella*, on the *Jordan*, with a Town of that Name in *Macedonia* (d). The Author of the *Hiſtoria Patriarcharum*, where he ſpeaks of *Lot*'s Wife, ſays, *Utica* is not far from *Sydon* (e). *Le Clerc* himſelf, in his Comment on Geneſis, takes *Serandib* for *Madagaſcar* (f); whereas that is the Name given by the *Arabs*, and other Orientals to the Iſland *Ceylon*, or rather *Selan*. (g)

P. *Honore* de *S. Marie* imputes the Hiſtory of the Church being ſo little known, in a great Meaſure, to the want of Applying to Geography (h): *Le Clerc* gives an Inſtance in P. *Garnier*, who is ſo greatly miſtaken in his Eccleſiaſtical Geography of *Africa*, for want of having Recourſe to the Books written on that Subject, without which Caution one muſt inevitably go aſtray (i): Geography is alſo neceſſary to a Collector of the Councils, as appears from the Faults charg'd on the ſame *Garnier*, by the Author of the *Traité de l' Etude des Conciles & de leurs Collections*; who alſo charges Pere *Hardouin*, with committing Errors of the ſame Kind, in the Geographical Table to his Collection of the Councils. (k)

To Literati.] *Antiquaries*, *Scholiaſts*, and thoſe who ſtudy the *Belles Lettres*, ſhould be acquainted with Geography; without which the Claſſical Authors, and other Antient literary Monuments cannot be underſtood.

The Learned *Hottinger* fell into a great Geographical Miſtake imagining that the Salt of *Oſtracine*, a Maritime Town in the Deſart between *Egypt* and *Paleſtine*, came from *Aſtrakân*; as *Reland* obſerves in his *Palæſtina Illuſtrata*. A Grammarian, who has mixt his own trifling Notes with thoſe of *Servius* on *Virgil* (l), ſays, *Hyrcania* [a Province of *Perſia*, on the South Side of the *Caſpian* Sea] *is a Wood in* Arabia.

(a) Paſchoud Geogr. Epiſt. Ded. p. 6. (b) Le Clerc Art. Crit. Vol. 1. p. 13. (c) Vid. Refl. on Learning ap. M. Trev. tom. 40. p. 1854. (d) Franc. Bouldvini reſp. altera ad J. Calvin ap. de Sanjore Bibl. Critiq; Cap. 26. (e) Le Clerc ubi ſupr. p. 14. (f) Id. ib. c. 8. p. 72. (g) Hyde Not. ad Peritſol. Itin. Mundi. p. 25. (h) Reflex. ſur les Regl. & ſur l'uſage de la Critique Vol. 1. p. 62. (i) Vid. le Clerc Bibl. Choiſ. tom. 2. p. 318. (k) Vid. Mem. des Trev. March 1725. p. 448. (l) In Æn. IV. v. 367.

Joh. Fred. Hekelius, in his Notes on *Cluverus*, tranſports the Council of *Nice* into *Piedmont*: ſo does Mr *Reading* in his *London* Edition of the ſame Author. (a)

Baudelot ſays, *Iſpahân* in *Perſia* is the Antient *Suſa*. (b)

To Hiſtorians.] Geography is neceſſary to the Hiſtorian; it is ſo neceſſary that without it an Hiſtory cannot be underſtood (c) (*A*), nor either Sacred or forreign Writers (d). Without it the Hiſtorian muſt needs deſcribe the March and Expeditions of Armies wrong, and ſo miſlead the unſkilful Reader (e): 'Tis not poſſible to comprehend the Expeditions, Battles and Sieges of *Alexander*, without firſt having an exact Knowledge of the *Granicus*, *Archipelago*, *Aſia Minor*, *Syria*, *Egypt*, *Babylonia*, *Perſia*, and even the *Indies* (f). The Errors of various Kinds committed by Hiſtorians, both Antient and Modern, for want of a Knowledge in Geography, are numberleſs: confounding different Countries, Nations, Seas, Rivers, Mountains, Cities; and miſplacing Nations, Cities; joining diſtant Countries; erring in the Site and Diſtances of Places.

Sabellicus confounds the *Danes* with the *Dacians* (g); *Curtius* (h), and Madam *de Scudery* (i), the *Euxine* with the *Caſpian* Sea; *Corn. Nepos* the *Rhodanus*, [or *Rhone* in *France*] with the *Eridanus* (k), [or *Po* in *Italy*.]

Curtius confounds Mount *Caucaſus* with *Parapamiſſus* (l) and *Taurus*. (m)

(a) Journ. Literat. Tom. 14. p. 219. (b) Utilité des Voyag. p. 771. (c) Hinklem. Pref. ad al Korân. (d) Voſſ. de Philol. c. 11. p. 53. (e) Le Clerc Ars Critic. Part 3. Sect. 3. Cap. 2. 7. (f) Vid. Obſ. Select. Vol. 4. p. 332. Vallem. Elem. de l'Hiſt. Vol. 1. p. 112. (g) Ap. Au. differ. Geogr. Anc. Mod. & Hiſt. Pref. (h) L. 5. c. 10. 3. (i) Vid. Parnaſſe Reforme. p. 128. (k) In Hanib. c. 4. § 1. (l) L. 5. c. 10. 3. (m) Ib. l. 7. c. 3. 19.

(*A*) A late Learned Author, ſpeaking of the Maps of *Italy*, inſerted at the Beginning of his Works, obſerves that no one can well underſtand the Hiſtory of a Country, without having a ſufficient Knowledge of the Geography thereof; for otherwiſe he can have no Notion of the Change, by the Length of Time, or the Wars; knows nothing of the Relation between Provinces, Principalities and Cities; nor of their Common, or Oppoſite Intereſts according to Times and Places; in ſhort is entirely in the Dark as to the March of Armies, the Operations of War, and the Conſequences of Loſſes and Conqueſts (*a*). If therefore the Knowledge of Geography be neceſſary to a Reader of Hiſtory, it muſt be much more ſo to an Hiſtoriographer.

(*a*) Muratori. Pref. ad Rer. Italicar. Scriptores.

Petronius and *Florus* commit the ſame Fault with *Virgil* and other Poets obſerved above; the latter ſays, *Brutus* and *Caſſius* reſted in the ſame Place which was fatal to *Pompey* (a); *Arrian* confounds *Telmeſſus* a City of *Lycia*, with *Termeſſus* of *Piſidia* (b); Some, *Peluſium* or *Tinah* at the Eaſt Mouth of the *Nile*, with *Belbeis* (c) an inland City of *Egypt*, four Stages diſtant; but moſt with *Dimyât* or *Damietta* (d) above 60 Miles to the Weſtward. *Sandoval* miſtakes *Coron*, a Maritime City of the *Morea*, for *Chæronea* a City of *Beotia* far within Land (e).

Curtius makes *Arabia* contiguous to the Country about *Arbela* (f), and *Hyrcania* to that of the *Amazons* (g); *Le Clerc* has ſhewn numberleſs geographical Errors in this Hiſtorian (h), whom *Perizonius* endeavours to vindicate.

Arrian places the antient *Germans* on the *Ionian* Sea: And *Diodorus Siculus* affirms two or three times over, that the City of *Ninus* or *Nineveh* ſtood on the *Euphrates*.

Vaillant in his Hiſtory of the Kings of *Syria* by Medals, confounds *Heliopolis* with *Hierapolis*, both Cities of that Country (i); and the Abbe *de Choiſy* in his Hiſtory of the Church, ſpeaking of the Perſecution under the Emperor *Valens*, puts *Heliopolis* in *Armenia*, contrary to the Authority of all Writers (k).

Ricaut places *Baſrah* (in the *Perſian* Gulf) near *Biblus* in *Phœnicia* (l), and *Sis*, in *Cilicia*, formerly the Capital of *Armenia Minor*, 16 Days Journey from *Etchmiaſin*, Eaſtward, near *Candakar* (m); (by which we ſuppoſe he means *Kandahâr*, a City of *Perſia* towards the *Mogul's* Empire) tho' it lies to the South-weſt of *Etchmiaſin*, or rather *Echmiadzin*, above 40 Days Journey of the Karawân diſtant.

Sandoval in the Voyage of *Charles* V. ſays, they reckon but 10 Leagues between *Paris* and *Luxemburg*, tho' there are above 72. Hiſtorians are full of ſuch Errors, whereof (n) *Gryphius* has made a Collection.

Some Hiſtorians to avoid the like Miſtakes, have travell'd to view the Scenes of Action; while others pretend an exact Enquiry with regard to Places is not incumbent on an Hiſtorian.

(a) Flor. l. 4. c. 7. (b) Vid. Bayle Dict. Critic. Art. Telmeſſus (c) Will. Tyr. L. 19. c. 13. & paſſim; Renaudot, Hiſt. Patr. Alex. p. 270, 532. (d) Lightfoot Horæ Hebraic. du Freſnoy, Meth. pour etudier Geogr. Tom. 4. c. 16. p. 299. (e) Audiffret ubi ſupr. (f) Lib. 5. c. 1, 11. (g) L. 6, c. 5. 24. (h) Ars Critica, Vol. 2. p. 184. (i) De la Roque Voy. de Syrie, Tom. 1. p. 138. (k) Ibid. p. 148. (l) Ricaut pref. State of the Ottom. Emp. chap. 12. (m) Id. Pref. State Gr. and Armen. Chur. p. 390. (n) De Errorib. exter. Geographicis ap. Miſcel. Lipſienſ. Tom. 10. Ann. 1721.

Polybius travell'd *Africa, Spain, France, and the outward Sea, which waſhes thoſe Countries, chiefly to correct the Ignorance of the Antients in thoſe Parts, and to inform the Greeks* (a). Before, giving an Account of *Hannibal's* paſſing the *Alps*, he ſays, *He went to the* Alps *to view the Places and know the Truth* (b). *Diod. Siculus* in the Beginning of his Hiſtory, tells us, that he travell'd *great Part of* Aſia *and* Europe *to ſee the moſt neceſſary Parts, in regard many Faults were committed, thro' the Ignorance of Places, not only by the common Writers, but thoſe of the firſt Rank. Saluſt* before he wrote his Hiſtory examined the Seat of the War between the *Romans* and *Jugurtha* (c).

To Travellers.] *Laſtly*, Geography is moſt neceſſary to a Traveller; for how ſhall he improve Geography (which is his proper Office) if he does not underſtand it? How ſhall he fix the Situation of Places for the Geographer, if he knows not how to find the Latitude and Longitude? How ſhall he be able to deſcribe a Country, or know what is moſt worthy his Notice and Enquiry, or in ſhort, where to look for Antiquities, if he is not acquainted with the Deſcription of it?

The Errors of Common Travellers for Want of a little Skill in Geography are very numerous and enormous, but I ſhall only inſtance in thoſe of ſome Note:

Baldæus at the Entrance of his Account of the *Eaſt Indies*, aſſerts, that *Cambaya* is ſeated upon the River *Indus* (d), tho' it is above 200 Miles from thence (e); of the ſame kind, but more groſs, is the Blunder of a certain Virtuoſo, who in his Travels with my Lord *Arundel* to *Vienna*, tells you he croſs'd the *Tanais* at *Mentz* (f).

Teixera one of the moſt learned and judicious of all the Travellers, yet miſtakes *Mecca* for the Port of *Mokha* (belonging alſo to *Arabia*) on the *Red Sea* (g), about 10 Degrees more to the South. *Belon* will have *Mecca*, which is ſituated in the Province of *Hejâz*, to have been *Petra* or *Recem*, a City of *Arabia Petræa* (h), perhaps the ſame at preſent call'd *Hajr*, which ſignifies a *Stone* as well as *Petra*. This Author (who indeed errs in almoſt every Thing he ſays relating to Geography) affirms, *Balbec* in *Syria* to be *Cæſarea Philippi* (i), and that the Springs of *Jordan* paſs by it: Tho' *Cæſarea Philippi*, and the Springs of *Jordan* are in the *Holy Land*, above 20 Leagues diſtant; he takes *Aman* or *Hamah* a Midland City of *Syria*, for *Tarſus* (where St. *Paul* was) a Maritime City of *Cilicia* (a); ſays the Country of *Palmira*, which lies above 3 Days Journey to the North-Eaſt of *Damaſcus* in the *Syrian* Deſerts, is not far from the *Mediterranean Sea*, and that it lies between *Egypt* and *Syria* (b).

(a) Polyb. Lib. 3. p. 293. Edit. Amſt. (b) Ibid. p. 280. (c) Vid. Bell. Iug. (d) Baldæus ap. Churchill's Collect. Voy. and Trav. Vol. 3. p. (e) See Conſtruct. Maps and Globes, Pref. p. 8. (f) Stubbs Letter to Dr. More, Poſtſcr. p. 80. ap. his Reply. (g) Teixeira Hiſt. Perſ. p. 228. (h) Belon Obſerv. p. 76. (i) Ibid. p.

Theſe Blunders however, may ſerve to defend him from the Cenſure of being the Plagiary of *Gyllius* (c), who was an exact Author. To which we may add, that (d) *Gyllius*, makes *Haleb*, or *Aleppo*, *Berræa*; whereas *Belon* miſtakes it for *Hierapolis*.

Poulet will have *Carræ*, where *Craſſus* was defeated, to be *Cars* in *Armenia*, ſuppoſing *Strabo* and all other Authors Antient and Modern to have err'd, in placing the firſt in *Meſopotamia*(e). In conſequence of this Error, he falls into many more, making *Tocat* in *Anatolia*, to be *Niſibis* or *Antiochia Mygdonia* (f), which every body knows is in *Meſopotamia*; and confounds *Arzerûm* in *Armenia*, (which is his *Edeſſa* g) with *Cæſarea* or *Mazaca* in *Cappadocia*; (which he extends as far as *Tefflis* h). He finds fault with *Belon* for confounding *Hamſa* or *Hems*, with *Tarſus*; yet confounds *Hamſa* with *Hama* (i), (which he makes to change Places) and *Hama* with *Apamia*, as indeed almoſt all Travellers do, not excepting *De la Roque* (k), tho' they are a Days Journey aſunder. *Apamia* being at preſent call'd *Famiyah*, or *Afamiyah* (l): ſtanding lower down on the *Orontes* or *Aſi*, and *Hama*, probably the antient *Epiphania*. This Author runs into a greater Abſurdity ſtill, ſuppoſing *Bir* on the *Euphrates*, and *Aleppo*, to be the Cities of old known by the Names of *Arethuſa* and *Lariſſa*; tho' theſe laſt lay ſeveral Days Journey to the South.

To Geographers.] It may ſeem ſomewhat inconſiſtent to put the Geographer himſelf among the Number of thoſe to whom Geography is neceſſary, as if one who makes any Science his Profeſſion, could be ſuppos'd ignorant of it; and yet that is very often the Caſe. We could mention ſome, who did not know the Difference between the Poles of the Zodiac and the Polar Circles; and others, who have confounded *Calais* in *France*, with *Cadiz* in *Spain*: Not to mention innumerable other Errors altogether as groſs, committed for want of conſulting proper Authors, or perhaps knowing them. But we ſhall treat of Matters

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(a) Belon. Obſerv. p. 76. (b) Ibid. Lib. 2. cap. 76. (c) Vid Thuan. Hiſt. Lib. 16. (d) Vid. Sionit. & Heſron. de Orient Urb. p. 12. ap. Geogr. Nubiens. (e) Poullet Nouv. Relat. du Levant. Tom. 2. p. 15. 105. (f) Ibid. p. 76. (g) Ibid. p. 88. 92, 109. (h) Ibid. p. 8. (i) Ibid. p. 104. (k) De la Roque Voy. de Syrie, Part 2. p. 194. (l) Hyde Not. ad Peritſol. Itin. Mundi p. 15.

which relate to Geographers in another place; in the mean time, referring thoſe who are curious to know more upon this Head to the Authors cited in the Margin (a).

Authors.] The Authors who have ſhewn the Uſefulneſs of Geography, are *Eachard*, in the Appendix to his Compendium.

Vallemont, Elemens de l'Hiſtoire, Liv. 2. chap. 1.

Du Freznoy, in his Diſcours ſur l'Etude de la Geographie, prefixt to the Method pour Etudier la Geogr.

Baudelot, de l'Utilitè des Voyages; *Robbe*, and other *French* Geographers.

CHAP. IV.

Of the Method of Studying GEOGRAPHY.

HAving ſhewn the Uſefulneſs of GEOGRAPHY to Perſons of ſeveral Profeſſions, it will be proper next to give ſome Directions for attaining to a Knowledge of it; Which Directions relate either to the Apparatus, or Method of Studying.

Apparatus.] I. The Apparatus or Materials proper for learning Geography, are;

1. Globes and Maps to exhibit the Earth. 2. Tables to enumerate the ſeveral Parts of the Earth, their Diviſions and chief Places, with their Poſitions correſponding to the Globes and Maps. 3. Treatiſes to explain more fully by Words, what the Maps and Globes reprepſent to the Eye. 4. Geographical Dictionaries, or the Things contain'd in Treatiſes alphabetically diſpoſed, in order to help the Memory.

Choice of Authors.] As there are good and bad Materials of all Sorts, Care ſhou'd be taken to chuſe the beſt and leave the worſt; accordingly the Globes and Maps of *Del' Iſle* and *Senex*, ſhou'd be preferr'd to thoſe of *Blaew*, *de Wit*, *Berry*, *Sanſon* or *Moll*; thoſe of the four Firſt being of a long ſtanding, want the late Diſcoveries, and thoſe of *Moll*, eſpecially his Globes, being full of groſs Errors: In like manner, the Treatiſes written by *Cellarius*, *Eachard*, *Gordon*, *Morden*, the Authors of the *Complete Geography*,

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(a) Gryphæus de Exteror. Error. Geogr. p. 1. & ſeq. ap. Miſcell. Lipſ. Tom. 10. Conſtruct. of Globes and Maps, Append. Chap. 6. p. 174.

Geography, *Nablot*, *Robbe*, *Martineau*, *Du Pleſſis*, ſhou'd be choſen, before thoſe of *Heylin*, *Munſter*, *Meriton*, &c. as being more modern; and before thoſe of *Cluverus*, *de la Croix*, *de la Foreſt de Bourgon*, *The Short Way to know the World*, &c. as being more correct.

The Materials ſhou'd be ſo choſen, that the Globes or Maps, Tables, Treatiſes and Dictionaries might correſpond with each other; but few Geographers have publiſh'd a Body of Geography in all the ſeveral Forms; *del'Iſle* has given only *Globes* and *Maps*; *Morden*, *Mercator*, *Wells*, *Cellarius* and *Martineau du Pleſſis*, only *Maps* with a *Treatiſe*; *Ortelius*, *Treatiſes*, *Maps and Dictionaries*; *la Martiniere*, a *Dictionary* and *Tables*; *Gordon*, *Noblot*, *Robbe*, *Luyts*, and the Authors of *the Complete Geographer*, have to a Treatiſe joined *Maps* and *Tables*; and the copious *Indexes* in ſome of them ſerve inſtead of *Dictionaries*; but the *Maps* of none of them, excepting *Mercator*, *Ortelius*, *Morden*, *Wells*, *Cellarius* and *Gordon*, agree with the *Treatiſes*; nor do the *Tables* of *la Martiniere* with his *Dictionary*. In ſhort, *Sanſon* is the only *Geographer* who hath publiſh'd *Globes*, *Maps*, *Tables* and *Treatiſes* of his own, adapted to one another and agreeing among themſelves.

Method of Studying, as to

II. The Method of Studying relates to the Subject, the Authors to begin with, the Order of reading them, and the View of the Student.

—the Subject.]

(1) Before the Student enters upon the Deſcription of Countries or Special Geography, he ought to be acquainted with the ſeveral Matters preparatory thereto, which are comprized under the Name of General Geography, and handled in this Treatiſe; otherwiſe he will be frequently at a loſs on Account of the different Terms, ſuch as Longitude, Latitude, Climates, Zones, Tropics, Equator, Meridians, and the like, that are not explain'd in the Places where they occur, it being preſumed that they are known to the Reader beforehand; and indeed without a competent Knowledge of theſe Preliminaries a Geographical Deſcription will be in a good meaſure unintelligible.

—The Authors to begin with.]

(2) With regard to Treatiſes for explaining the Globe and Maps, ſmall Ones and ſuch as are moſt eaſily underſtood, are fitteſt to begin with; as the Introductions of *Sanſon* and *Morden*; the Aſtronomy and Geography of *Morden* and *Watts*; *Witty*'s Projection of the Sphere; the Conſtruction of Globes and Maps; *Morden*'s, *Harris*'s, *Senex*'s, &c. Uſe of the Globes; *Allingham*'s Uſe of Maps, and the like, for the *General Geography*: And for the *Special*, *Eachard*'s *Compendium*, *Gordon*'s *Geographical Grammar*,

Grammar, *Morden's Deſcription of the World*, *De Fer's Introduction à la Geographie*, *Robbe's Methode pour apprendre facilement la Geographie*, *Noblot's Geographie Univerſelle Hiſtorique & Chronologique Ancienne & Moderne*; *Martineau du Pleſſis Nouvelle Geographie*, eſpecially the laſt Edition by the Abbè *Langlet*, under the Title of *Methode pour etudier la Geographie*. Theſe (as moſt other Syſtems) are preceded by a ſhort Treatiſe of General Geography, but thoſe of *Gordon*, *De Fer* and *Robbe* are pretty explicit.

When the Student has done with theſe, he may have Recourſe to the more intricate or copious Authors, *Varenius Geographia Generalis*, *Liebknecht Elementa Geographiæ Generalis*, *Riccioli's Geographia Reformata*, *Sherer's Atlas Novus*, for the General Geography; and for the Special, *Sanſon's Deſcription del Univerſe*, *Heylin's Coſmography*, *Cellarius's Notitia Orbis Antiqui*, *Brietius Parallela Geographiæ Veteris & Novæ*, *Luytz Introductio ad Geographiam*, and his *Improver*, the *Complete Geographer*; the *Atlas's* of *Blaew* and *Janſſon*, &c.

—Order of Reading them.]

(3) As to the Manner of proceeding in the Study, it is Two-fold; either to read each Author ſingly from Beginning to End, before you take up another; or to read all the Authors together (who treat of any Part of Geography) on the ſame Matters: For Inſtance, firſt what they have written of *Europe* in General, then what they have all written of *Spain* or *France*, and ſo of other Countries, comparing their Accounts with the Globe or Map. The firſt Method is the fitteſt for attaining a general Notion of Geography quickly; but the laſt, tho' more tedious, is beſt for giving a more thorough Knowledge of things; for thereby you ſee wherein your Authors agree and diſagree, and by comparing them with your Globe or Map, may be able to judge of their Excellency or Defects, at the ſame Time that the frequent Repetition makes the deeper Impreſſion on the Memory; beſides, this Way is beſt for thoſe who wou'd Common-place or take Notes of what they read.

—The different Views of Studying.]

(4) Gentlemen who follow no Buſineſs may Study Geography as their Inclination leads them. But Perſons entring into the World ſhould do it with a View to the Profeſſion for which they were deſign'd: Thus, the Soldier ſhould conſider Countries with regard to their natural or acquired Strength; the Merchant with reſpect to their Commodiouſneſs for Trade; the Stateſman ſhould apply himſelf moſt to the Civil, the Churchman to Eccleſiaſtical Geography; but one who would be a Proficient in the Science, ſhould

conſider it in every Light, and ſtudy it thoroughly in all its Branches.

Contrivances for Beginners.]

Various are the Methods that have been contrived for giving Students a ready Notion of Geography: To this Effect Authors have moulded their Works into ſuch Shapes as to them appear'd moſt proper to ſtrike the Imagination and allure the Attention; thus ſome have written Treatiſes in Verſe, as *Dionyſius*, *Dicæarchus*, &c. among the Ancients; *Mathiou*, *Violer*, &c. among the Moderns; Others have written by way of Queſtion and Anſwer, or *Dialogue*, as the Author of the *Short Way to know the World*, *Hubner* in his *Geographical Queſtions*, *Langlet* in his *Geography of Children*, &c. The ancient *Greeks* drew Maps with the Poſitions and Diſtances for the Inſtruction of Youth, of which Kind were thoſe of *Anaximander*, *Eudoxus*, *Hecatæus*, *Dicæarchus*, and Others (a). Afterwards they taught their Children Geography by Means of playing Cards; a Method revived by Sir *Peter Wyche* in his Contrivance, intitled *The World Geographically deſcribed in 52 Copper Plates made up in Cards*; and purſued by *Violer* beforementioned, in his *Introduction to Univerſal Geography* and his *Game of Geography* (b).

Others have publiſh'd Treatiſes accompany'd with Maps, Tables and Indexes, expreſly for the Uſe of Students; whereof thoſe of *de la Croix*, *Robbe*, *Langlet*, *du Freſnoy* and *Dangeau*, bear the Title of *Methods for learning Geography eaſily*. The Work of this laſt Author is a *Deſcription of France*, which he has given as a Specimen, in one Octavo Volume containing 136 Pages: It conſiſts of Maps; Genealogical and Chronological Tables; Plans of Cities; and Battles Repreſentations of the Aſſemblies of the Clergy, Dyets, Parliaments, Eſtates General or Provincial, &c. each of them accompany'd with marginal Explanations. As a great many Things of different Kinds huddled together confound the Learner, the Author gives in many Maps what is commonly exhibited in One: His Book contains 12 Maps; the Firſt exhibits only the Figure of *France*, with the Countries and Seas ſurrounding it; the Second, its Civil Diviſion into 35 Provinces; the Third, the Poſition of the 35 Capital Cities; the Fourth, ſome of the Subdiviſions of the Provinces; the Fifth, the Chief Towns of thoſe leſſer Countries; the Sixth, the 6 Chief Rivers of *France*; the Seventh, ten other great Rivers; the Eighth, the moſt conſiderable Rivers that fall into the Six great Ones; the Ninth, the Eccleſiaſtical Diviſion into 18 Archbiſhopricks and Biſhopricks; the Tenth, the Parliaments; the Eleventh, the Preſidentſhips; the Twelfth, the Diviſion of the Kingdom according to Generalities and Elections.

(a) Vid. Euſtath. ad Dion Afer. (b) Introduct. a la Geographie Univerſelle, & la Jeu de la Geographie.

As the Author's Plan is grounded on the Principle that the Images of Things give a more perfect, quick and durable Impreſſion than Words, he ſometimes explains Figures by Figures; thus in the Margin of the ſixth Map, the ſix great Rivers are repreſented by Figures of Men and Women, in Attitudes fit to expreſs ſeveral Properties belonging to them.

Authors.] Several Authors have given Directions for ſtudying Geography, among which are, *Poſſevin's Methodus ad Geographiam*, inſerted at the End of his *Apparatus ad Hiſtoriam*; *Voſſius de Philologia* p. 77. *Riccioli* in his *Geographia Reformata*, Book 1. Chap. 17. p. 25. *Le Clerc* in his *Ars Critica*, Vol. I. p. 12. *Vallemont* in his *Elements de l'Hiſtoire*; but chiefly Abbe *Langlet du Freſnoi* in a particular Diſcourſe before the *Methode pour Etudier la Geographie*, where ſeveral juſt Remarks are made on the Works of the Modern Geographers; the Parts which each has deſcribed beſt pointed out; and Directions given for chuſing Maps and uſing Geographical Dictionaries, Books of Travels, &c.

CHAP. V.

Of General Geography, *and its Diviſion according to divers Authors.*

SECT. I.

Variety among Authors in dividing GEOGRAPHY.

IT is Time to return to our Subject from whence we have digreſs'd.

We have already obſerved that Geography or the Deſcription of the Earth, may be exhibited in three ſeveral Manners; namely, by Repreſentation, Synoptical Tables, and Treatiſe; by which laſt Method thoſe Things are explained at large, which are repreſented to the Eye in Globes and Maps.

In deſcribing the Earth by Treatiſe, we may diſtinguiſh the Deſcription itſelf, which is call'd Special Geography, from the

Explanation of the Things that belong both to the Science and the Deſcription, which is call'd General Geography.

In treating of General Geography (which is the Subject of this Book) to Advantage, the firſt Thing to be conſider'd of is a Method of dividing it; this Diviſion may be made two Ways, either by ranging the Matters to be treated of ſimply according to their Kinds; or by dividing Geography itſelf into Species or Parts.

As this laſt Method is the moſt Scientifical of the Two, Authors have taken a great deal of Pains to make an accurate Analyſis of Geography; but altho' there is nothing which they have labour'd at more, there is hardly any thing which they have ſucceeded in leſs, ſcarce Two of them agreeing in the ſame Sentiments, either as to the Number, Order, Quality, or Denomination of the Parts whereinto they have divided it; And hence ariſes ſuch Variety of Species of Geography, moſt of them improper and ſuperfluous, ſuch different Senſes to the ſame Terms, and different Terms to expreſs the ſame Senſe.

Some divide Geography into Mathematical and Hiſtorical (a), Some into Local and Hiſtorical (b); Others into Spherical and Topical (c); Others into Exterior and Interior (d); Some into General, or Univerſal and Special or Particular (e); Some into General or Aſtronomical, and Special or Hiſtorical (f); Others into Pure or Mathematical, Mixt or Hiſtorico-phyſical, or Special, and more Special or Hiſtorico-Civil (g). Some into Learned, Civil, Practical and Subterranean (h); Some make two diſtinct Diviſions of Geography; the Firſt into Geography, properly call'd, and Hydrography, the Second into Aſtronomical, Natural and Hiſtorical (i); Laſtly, Others divide Geography into Theoretical and Practical (k).

Of theſe Terms, Mathematical, Spherical, General, Univerſal, Pure, Learned and Aſtronomical, import nearly the ſame Thing. Local and Topical anſwer to Topography, the former including Mathematical Conſiderations; Special Geography has Variety of Senſes, ſometimes it implies Local, ſometimes it is ſynonimous with Hiſtorical, Mixt and more Special; Hiſtorical alſo varies its Signification, ſometimes it anſwers to Civil and Sacred Geography, ſometimes to Civil Hiſtory, and at other Times to

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(a) Voſſius de Scient. Math. c. 42. p. 240. (b) Labbe Abbreg de la Sphere, ap. Geogr. Royal. (c) Carpent. Geogr. Par 1. p. 5. (d) Golnitz ap. Varen. Geogr. p. 2. (e) Varen. Geogr. Gen. (f) Alſted. Encycl. Vol. 1. p. 140. 528. (g) Juncker. Lin. prim. Erudit. Part 2. p. 183. (h) P. Caſtel Math. Univerſ. p. 178. & ſeq. (i) Sanſon Introduct. a la Geogr. (k) Buſſing. Math. Univ. Geogr. Tab. 1.

Natural and Civil Hiſtory. Authors differ no leſs in the Subdiviſion of theſe grand Species or Branches of Geography, and in the Senſe of the Terms, according as they take in more or leſs, or apply them to different Matters.

Before therefore we exhibit our own Analyſis, it will not be amiſs to examine thoſe which have been given by other Authors; the Chief of whom are, *Alſtedius, Varenius, Sanſon, Juncker, Pere Caſtel* and *La Martiniere* Geographer to the King of *Spain*.

SECT. II.

Analyſis of GEOGRAPHY *according to* Alſtedius *and* Varenius.

Alſtedius.] ALSTEDIUS divides Geography into two prime Branches, *General* or *Aſtronomical*, and *Special* or *Hiſtorical (A)*; under the Firſt he comprizes the Matters relating to the Terreſtrial and Celeſtial Properties, as well as the Application of the Sphere, to which he joins the Repreſentation; the Second Branch is ſub-divided into *Hydrography*, *Geography* ſtrictly taken, and *Repreſentation*.

But tho' this Author was a great Maſter of Method, yet this Diviſion is very erroneous and imperfect; for *Aſtronomical* Geography is not the ſame with *General* Geography, but only a Branch of it; *Hiſtorical* Geography which is another of its Branches, is confounded with *Special* Geography; their *Hydrography* and *Geography* ſtrictly taken, which are Sciences themſelves, are wrongly made Branches of Special Geography, nor can *Repreſentation* be ſaid to be one; beſides all the Species of *Hiſtorical Geography* are wanting.

(*A*) He divides Geography elſewhere, into *Theoretical* and *Practical*; the Firſt, treating of the Dimenſions of the Terreſtrial Globe; the Latter, deſcribing the Land and Water in a Picture (a) or Repreſentation.

(a) Alſted. Encycl. Vol. I. p. 528. Reg. 2.

And

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Analyſis of GEOGRAPHY *according to* Alſtedius.

GEOGRAPHY divided into

1. General or Aſtronomical.
    1. Affections,
        1. Magnitude, Figure, Site, Immobility.
    2. Diſtinctions general, divided into
        1. Claſs, comprizing
            1. Circles Terreſtrial, or of the Globes,
            2. Zones,
            3. Climates.
        2. Claſs, which conſider the Earth in reſpect of
            1. The Heavens diſtinguiſhed into
                1. The 32 Points of the Horizon.
                2. Sphere.
                    1. Right,
                    2. Oblique.
                    3. Parallel.
                3. Regions of the
                    1. Aſcii
                    2. Amphiſcii.
                    3. Heteroſcii.
                    4. Periſcii.
            2. Terreſtrial or Circles of the Terreſtrial Globe, and divided according to
                1. Longitude,
                2. Latitude.
            3. The Parts of the Earth themſelves divided according to the Regions of the
                1. Periæci.
                2. Antæci.
                3. Antipodes.
    3. Repreſentation.

2. Special or Hiſtorical
   1. Hydrography; which treats of the Meaſure of the Water.
      1. Primitive, or the
         Sea with reſpect to Quantity, Diviſion, Motion.
      2. Derivative
         Lakes, Rivers, Fountains,
   2. Geography ſtrictly called
      1. Diviſion into Lands.
         1. Unknown
            1. Arctic.
            2. Antarctic.
         2. Known
            1. New.
               1. Extreme.
                  1. Northern,
                  2. Southern.
               2. Middle.
                  America.
            2. Old conſider'd in
               1. General
               2. Special
                  1. Europe.
                  2. Africa.
                  3. Aſia.
   3. Repreſentation (a).
      1. Geographical.
         1. Globes.
         2. Maps.
      2. Logical.
         1. Tables.
            1. Methodical.
            2. Chequer'd (b).

(a) *Alſted.* Encyclop. Vol. I. p. 14 and 528. (b) Ibid. p. 575.

Varenius.] *Varenius* alſo divides Geography into General or Univerſal, and Special or Particular; the former he ſubdivides into *Abſolute*, *Relative* and *Comparative*; under the Firſt of which, he enumerates the Properties of the Earth itſelf, and its conſtituent Parts, with thoſe of the Water under the Title of *Hydrography*; under *Relative*, he ranges the Celeſtial Properties, and under *Comparative* the Terreſtrial (a). But this is rather a Diviſion of the Matters appertaining to Geography into Claſſes, than of the Science itſelf into Species; *Hydrography* which is the only Species produced, is brought in improperly, for the Earth and Atmoſphere to which it ſtands oppoſed, are not Parts of the Science: Neither is his Diviſion of *Special Geography* into *Chorographical* and *Topographical* proper, for *Chorography* and *Topography* are diſtinct Sciences themſelves.

Analyſis of GEOGRAPHY *according to* Varenius.

Geography.
1. General or Univerſal.
    1. Abſolute Part.
        1. Earth.
            1. Nature;
               Figure, Magnitude, Motion, Situation, Subſtance.
            2. Conſtituent Parts;
               Mountains, Woods, Deſarts, Mines.
        2. Hydrography.
            1. Water;
               Oceans, Seas, Lakes, Moraſſes, Rivers, Fountains.
        3. Atmoſphere.
            1. Air and Winds.
    2. Relative Part, explaining the
        1. Celeſtial Properties.
            1. Latitude, Zones, Climates, Shadows.
    3. Comparative Part.
        1. Terreſtrial Properties.
            1. Longitude, mutual Site of Places, viſible Horizon.
        2. Navigation and Ship-building.
            1. Diſtances by Sea, Points of the Compaſs, Ship's Courſe and Place.
2. Special or particular Geography.
    1. Chorographical.
    2. Topographical.

SECT.

(a) Vid. Varen. Geogr. General. L. 1. c. 1.

SECT. III.

Analyſis according to Sanſon *and* Buſſing.

Sanſon.] SANSON gives two different Diviſions of Geography; one into *Geography properly call'd*, and *Hydrography*, with their ſubordinate Species, *Chorography* and *Topography* (a); the other, into *Aſtronomical*, *Natural* and *Hiſtorical*; whereof *Natural* is divided into *Earth* and *Hydrography*; *Hiſtorical*, into *Civil*, *Sacred* and *Languages* (b), placing between the Two, the ſeveral Methods of exhibiting Geography.

This *Analyſis*, tho' more ſtrictly Scientifical than either of the former, labours under ſome Defects; Firſt, the two Diviſions ſtand as diſtinct and independent Things, neither does the Author aſſign any Reaſon why he divides the Science ſo variouſly; only he ſeems to conſider the Firſt, as the natural Diviſion of the Science, the Second as his own: But *Sanſon* had avoided the Embarras ſo far, had he conſidered the Firſt, as a Diviſion of *Geography* in General into ſubordinate Sciences; and made the Second, a Diviſion of *Geography properly call'd* into ſubordinate Species. Secondly, He introduces *Hydrography* into the Second Diviſion (c); but either he ſhould have brought in all the Branches of the Firſt or none. Thirdly, *Hydrography* is made a Branch of *Natural Geography* (d); whereas, *Hydrography* has a Natural Branch ſubordinate to it. Fourthly, *Natural Geography* ſhould come under *Hiſtorical* as well as *Civil*, &c. the one having its Dependance on Hiſtory as much as the other. Fifthly, The Branch relating to *Languages* is ſuperfluous and improper. Sixthly, The noted Branches of *Antient*, *Middle* and *Modern Geography* are omitted, as well as thoſe of *Parallel Geography*. Seventhly, The Methods of exhibiting Geography, which are the Technical Species, are not conſidered as Species of Geography at all, being connected with neither; however as they are inſerted after the Firſt, they ſeem to belong thereto, altho' they properly belong to the Second.

Sanſon has given no Table of Diviſion, that which follows being drawn up from the Contents of his Introduction.

(a) Sanſon Introd. a la Geogr. Part I. L. 1. c. 2. p. 4. (b) Ib. L. 3 c. 1. p. 11. and Part 2. Pream. p. 100. and L. 1. c. 2. p. 108, 200. (c) Ib. L. 2. de la Geogr. Nat. c. 1. p. 160. (d) Ibid.

Analyſis of GEOGRAPHY *according to* Sanſon.

Geography.

- 1. Diviſion of Geography into
  - 1. Geography properly called, divided into
    - Chorography.
      - Topography.
  - 2. Hydrography.
    - Topohydrography.
- Forms of exhibiting Geography.
  - 1. Repreſentation, which is of 2 Kinds;
    - Globes.
    - Maps.
  - 2. Method.
    - Tables.
  - 3. Diſcourſe or Treatiſe.
- 2. Diviſion of Geography, into
  - 1. Aſtronomical, dividing the Globes by Lines and Circles, into
    - Quarters, Hemiſpheres, Zones, Shadows, Poſitions, Climates, Longitude and Latitude.
  - 2. Natural, dividing the Globe into
    - 1. Earth,
      - Continents, Peninſulas, Iſthmus's, Inlands, Coaſts.
    - 2. Hydrography, or the Deſcription of the Water,
      - Seas, Gulfs, Streights, Lakes, Rivers.
  - 3. Hiſtorical, divided into
    - 1. Civil or Politic, ſubdivided into
      - Empires, Kingdoms, States, People.
    - 2. Sacred, or Diviſion according to Religions;
      - Judaiſm, Chriſtianity, Mahometiſm, Paganiſm.
    - 3. The Geography of Languages.
      - Primitive or Mother Languages.
        - General.
        - Particular.

Buſſing.] *Buſſing* in his Tables, divides Geography into *Theoretical* and *Practical*; the Firſt, he ſubdivides into *General* and *Special*; the Latter, into *Problematical* and *Organical*. But he purſues the Analyſis no farther; for inſtead of continuing the Diviſion of thoſe larger Branches into leſſer, he enumerates and claſſes the Matters contained under each, wherein for the moſt Part he copies from *Varenius*, as to the *Theoretical Species*.

Analytical Table according to Buſſing.

Geography may be divided into

1. Theoretical or Speculative, which is either
   1. General, treating of its
      1. Principles.
         1. Definitions, Axioms, derived from other
         2. Sciences ;
            Arithmetick, Geometry, Coſmography, Aſtronomy;
      2. Object, conſider'd as to ;
         1. Subſtance.
            1. Internal,
               Fire, Air, Water, Earth ;
            2. External ;
               Dry, Moiſt, Windy.
         2. Accidents or Affections ;
            1. Abſolute, as
               Figure, Magnitude, Site, Motion.
            2. Relative, reſpecting the Heavens.
               1. Application of the Circles of the Sphere.
               2. Longitude, Latitude.
               3. Diviſion into Hemiſpheres, Zones, Climes.
               4. Poſitions of the Sphere.
               5. Diverſity of
                  Seaſons, Riſing and Setting of Stars, Times, Shadows, and Situation of Inhabitants.
            3. Comparative ; by comparing any Part of the Earth, either with
               1. The whole, or another.
               2. A Part ; as to its
                  Bearing,
                  Diſtance.
               3. It ſelf.
   2. Special ; which applies Geography to the Parts of the Earth, and conſiders therein ſome Things ;
      1. Terreſtrial, as when in Maps, *viz.*
         1. Bounds, Figure, Magnitude.
         2. Mountains, Valleys, Woods, Moſſes, *&c.*
         3. Produce, Animals, *&c.*
      2. Hydrographical.
         Coaſts, Ports, Rivers, Lakes, Fiſh.
      3. Anemological.
         1. Winds, Heats, Rain, Snow, Thunder.
         2. Air and its Qualities (a).

4. Celeſ-

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a) Vide Buſſing. Math. Univ. Geog. Tab. 1.

4. Celeſtial.
   1. Zones, Clime, Longitude, Latitude,
   2. Length of Days, Riſing and Setting of
   3. The Stars ; Heat and Cold, &c.
5. Human, or relating to the Inhabitants.
   1. Natural ; as Form, Genius, Diſeaſes, &c.
   2. Sacred ; Religion, Rites, Officers,
   3. Moral ; Virtues, Vices,
   4. Political ; Government, Laws, Forces, Revenues, Cities, Towns, &c.
   5. Artificial ; Sciences, Laws, Arts, &c.
   6. Hiſtorical ; Origin, Migrations, Inventions, &c (a).

2. Practical.
   1. Problematical, or treating of various Problems.
      1. Geographical ; about finding the
         1. Quantity of a Degree, Meaſures, &c.
         2. Longitude and Latitude of Places, &c.
         3. Length of the Day every where.
      2. Hydrographical ; which is either
         1. Limenevritical ; employ'd in finding the
            1. Bearing of Places, and
            2. Declination of the Needle.
         2. Hiſtiodromical ; or the Way of
            1. Sailing on a given Rhumb.
            2. Computing the Longitude, Diſtance,
      3. Anemological ; in diſcovering the
         1. Point whence the Wind is coming.
         2. Degree or Force of the Winds.
   2. Organical ; treats of the making and Uſe of the
      1. Terreſtrial Globe.
      2. Maps and Charts.
      3. Mariners Compaſs and Magnetical Needle (b).

(a) Vid. Buſſing. Math. Univ. Geog. Tab. 5. (b) Ibid. Tab. 6.

S E C T. IV.

Analyſes according to Juncker, P. Caſtel *and* La Martiniere.

Juncker.] The next Author we ſhall produce is *Juncker*, who inſtead of improving the Method of dividing Geography, has perplext it more than it was before; for he not only employs the crudeſt Terms, but confounds different Species together; indeed he introduces the Diviſion according to Time, which all the reſt have omitted; but it is done in a very lame Manner.

Analytical Table according to Juncker.

Geography divided into
- 1. Pure, Mathematical or General; which conſiders the Affections of the Earth:
  - 1. Figure.
  - 2. Magnitude.
  - 3. Longitude, Latitude.
- 2. Mixt; or Hiſtorico-phyſical or Special. which conſiders the Globe according to Phyſical Principles and Phyſiological Objects.
- 3. Moſt Special or Hiſtorico-Civil; which conſiders the Globe as
  - 1. Diſtinguiſh'd into
    - 1. Four Quarters, Europe, Aſia, Africa and America; and their
    - 2. Unknown Lands.
  - 2. Exiſting from all Antiquity, and ſtill inhabited; whence Geography is divided [according to Time] into
    - 1. Moſt Antient.
    - 2. Antient.
    - 3. Middle.
    - 4. Modern (a).

Pere

(a) Vid. Juncker Liniæ Prim. Erudit. Part. 2. p. 183.

P. Caſtel.] *Pere Caſtel* purſuant to his Deſign of rendering the Study of the Mathematics eaſy to all Sorts of Capacities, has given new Diviſions of the Science, with Terms and Species not thought on before; that of Geography is divided into *Learned, Civil, Practical* and *Subterranean* (a). His *Civil* Geography conſiſts chiefly of *Hiſtory* (b); *Practical* is branched out into three Sorts of Sciences; *Odography*, which the Author calls *The Hiſtory or Science of Voyages and Art of Travelling, Navigation and Commerce* (c); *Subterranean* Geography, conſiders the Earth as it exiſts beneath the Surface or under Ground, and is ſubdivided according to the Matters (d) not the Science, like his *Civil* Geography.

Analytical Table according to P. Caſtel.

Geography divided into
- 1. Learned; ſubdivided into
    - 1. Aſtronomical; concerned about the Doctrine of the Sphere and Meaſure of the Earth.
    - 2. Phyſical or Natural; concerned about the Mechaniſm of the Earth.
- 2. Civil; ſubdivided according to the
    - 1. Foundation and Origin of States, *&c.*
    - 2. Progreſs; Encreaſings, Renewals, Decays.
    - 3. Nature or Conſtitution; Grandeur, Site, Riches, Government, Soil, Rivers, Trade.
- 3. Practical; ſubdivided into
    - 1. Odography; the Hiſtory and Science of Voyages and Art of Travelling.
    - 2. Navigation.
    - 3. Commerce.
- 4. Subterranean; ſubdivided into Organs, Elements, Circulations, Productions.

La Martiniere.] Laſtly, Mr. *La Martiniere* has given two different Diviſions of Geography in different Places of the ſame Work, according to the following Tables;

(a) See P. Caſtel Math. Univ. p. 178. (b) Ibid. p. 180. (c) Ibid. p. 181. (d) Ibid. p. 184.

I. *Analyſis according to* La Martiniere (a).

Geography.

- 1. Sacred.
- 2. Eccleſiaſtical.
- 3. Civil or Political.
    - 1. Ancient.
    - 2. Middle.
    - 3. Modern.
- 4. Poetical or Claſſical.

II. *Analyſis according to the ſame* Author (b).

Geography.

- 1. Aſtronomical.
- 2. Natural.
- 3. Hiſtorical.
    - 1. Civil or Political.
    - 2. Eccleſiaſtical.
    - 3. Phyſiological.

Both theſe Diviſions are defective, whether we conſider the Species introduced, or the Order of ranging them; as to the Species in the firſt, the three prime Ones, *Aſtronomical, Natural* and *Hiſtorical* are wanting; beſides the *Phyſiological,* which indeed properly is no Species. In the Second Diviſion, (which we have reduc'd to the Form of a Table) two of the prime Branches, *viz. Sacred* and *Poetical* are omitted, with the three ſubordinate Ones of *Civil* Geography, *Ancient, Middle* and *Modern.*

With regard to Order, in the Firſt Table the *Civil* and *Eccleſiaſtical* Species are made independent; in the Latter, they are ſubordinate to *Hiſtorical* Geography; in the Firſt, *Ancient, Middle* and *Modern* Geography, are aſſign'd to *Civil* Geography only, altho' the reſt have an equal Right to them: Beſides, *Political* ought to be diſtinguiſhed from *Civil,* and made a Genus both to it and *Eccleſiaſtical;* in the Second, *Natural* Geography is made a prime Branch; altho' according to his own Explanation of *Hiſtorical* Geography, it ought to come under it, as being ſubject to many Changes as well as *Civil.*

CHAP.

(a) See La Martin. le Grand Dict. Geogr. & Critiq. Vol. 1, Pref. p. 15.
(b) See Vol. 4. Part. 1. p. 127. Art. Geographie.

CHAP. VI.

The Order and Analyſis of GEOGRAPHY *according to a New* PLAN.

IT is obvious from the laſt Chapter, that moſt of the Authors who have undertaken to methodize Geography, have given us a Diviſion of the Matters rather than of the Science itſelf; or confounding the two Sorts of Diviſions together, have made their Analyſes to conſiſt partly of one, and partly of the other. Some of them have even erred ſo far as to confound *General* and *Special* Geography together. On the other hand, *Sanſon* and *La Martiniere*, who are the only Two that have given a Scientifical Diviſion, are far from having ſucceeded in their Attempts, their Tables being both defective and erroneous.

We ſhall therefore endeavour at an accurate and complete Diviſion of Geography; whereby we propoſe not only to fix the Analyſis of this, but ſet a Plan which may help towards methodizing the reſt of the Sciences.

SECT. I.

The Diviſion of GEOGRAPHY *into ſubordinate Sciences.*

Firſt then, Geography conſider'd in its utmoſt Extent, may be divided into four ſubordinate Sciences.

Geography.

- 1. Geography ſtrictly taken, or properly called
  - 1. Chorography.
  - 2. Topography.
- 2. Hydrography.

That theſe Branches are Sciences, appears, in that they are all alike diviſible into Species; being ſubordinate to Geography in General, in the ſame Manner as Aſtronomy and Geography are ſubordinate Sciences to Coſmography.

Theſe Sciences therefore agree with Geography, as to Principles and Quality; and differ from it only with reſpect to the Quantity of the Object; that of Geography being the whole Earth or Globe, and theirs only ſome Part.

No Anthor 'tis true, (that we know of) has taken 'em in this light, or brought them into a Diviſion of Geography, excepting one or two; *Alſtedius* introduces two of them, *viz. Hydrography* and *Geography* ſtrictly taken, as Species of *Special Geography*; but inſtead of ſubividing them into Species, or even conſidering *Chorography* and *Topography* as Branches of either, gives under them the Diviſions of the Water and the Earth. *Sanſon* indeed has reduced them all into one Claſs, but he does not mention whether they are to be conſidered as ſubordinate Sciences; neither has he given the Analyſis of any of them, excepting *Hydrography*, which he brings irregularly into his Diviſion of *Natural Geography*, where he handles the Diviſion of the Water. In Effect, Authors for want of conſidering them as Sciences, have been at a Loſs how to diſpoſe of them, and ſo left them out of their Analyſes.

As to the Origin of theſe ſubordinate Sciences, they are moſtly of modern Inſtitution; *Chorography* only, ſeems to have been in Uſe in the Time of *Ptolemy*, who comprizes under that Term the Conſiderations relating both to a Country and ſingle Place. *Coſma* the Monk who wrote in the ſixth Century, is the firſt Author remaining of the Ancients who mentions *Topography*, in a Work which he intitled *Topographia Chriſtiana*; the Moderns having by their Improvements in Navigation, extended their Knowledge over the Sea as well as Land, began to conſider it as the Object of a diſtinct Science which they called *Hydrography*; this induced a Neceſſity of eſtabliſhing another Science to comprize the Deſcription of the Earth ſeparate from the Water, to which they have given the Name of Geography Proper or ſtrictly taken.

SECT. II.

The Diviſion of GEOGRAPHY *ſtrictly taken into Species.*

THE Diviſion of any of theſe Sciences into Species, ariſes from the Conſideration of the Matters that enter into the Deſcription, as they relate to the Principles or Mathematics, the Object or Hiſtory and the Form of the Compoſition.

The Science of Geography ſtrictly taken, may be divided into three grand Species or Branches, Mathematical, Hiſtorical and Technical; each of theſe grand Branches may be ſubdivided into ſubordinate Species, according to the Nature of the Things that fall under them.

Thus Mathematical Geography may be ſubdivided into Aſtronomical and Geometrical; Hiſtorical, into Natural and Political; and Technical into Repreſentatory, Synoptical or Tabular and Explanatory.

The Diviſion is to be carry'd on ſo long as any Species ariſe; accordingly the Hiſtorical and Technical Branches are farther diviſible into leſſer Species; the Nature of which will appear more clearly from the following Analyſis of Geography ſtrictly taken,

Analyſis of

Geography ſtrictly taken.

- I. General.
  - 1. Mathematical.
    - 1. Aſtronomical.
    - 2. Geometrical.
  - 2. Hiſtorical.
    - 1. Abſolute Species.
      - 1. Natural Geography.
      - 2. Political.
        - 1. Civil.
        - 2. Eccleſiaſtical.
    - 2. Relative Species.
      - 1. National.
        - 1. Engliſh, French, German, *&c.*
        - 2. Turkiſh, Perſian, Chineſe, *&c.*
      - 2. Periodical.
        - 1. Ancient.
        - 2. Middle.
        - 3. Modern.
    - 3. Comparative Species.
      - 1. Parallel.
      - 2. Critical.
  - 3. Technical.
    - 1. Repreſentatory.
      - 1. Globar.
      - 2. Planiſpherical.
    - 2. Synoptical, or Tabular.
    - 3. Explanatory.
      - 1. Syſtematical.
      - 2. Analytical or Alphabetical,
- II. Special.

In this Analyſis of Geography ſtrictly taken, which will ſerve with ſmall Variations for the other three ſubordinate Sciences of Univerſal Geography; we preſume we have purſued the Diviſion ſo juſtly, that we have neither omitted any neceſſary Species, introduced any ſuperfluous ones, or ranged any out of Order.

Among other ſuperfluous Species, may be reckon'd the Theoretical and Practical, becauſe the Practice is always ſuppoſed to accompany the Theory in every Branch, and conſequently muſt not be ſeparated from it; for this Reaſon, we have given the Name of Technical to the third Diviſion of General Geography, inſtead of Practical as it is called by Others, to prevent confounding the Ideas of the Terms; for this Branch has its Theory, as well as Practice, like the reſt.

We have been very careful not to introduce ſuperfluous Species; almoſt all thoſe contain'd in our Analyſis, are to be met with in the Tables of one Author or other, (tho' not deduced in the ſame Manner, or rang'd in the ſame Order) excepting the National and Comparative Species, which yet we ſhall ſhew are not only neceſſary, but very important Ones when we come to handle them. Indeed we meet with a Treatiſe of Special Parallel Geography written by *Brietius*; but Authors overlooking that uſeful Species, have not inſerted it in their Analytical Tables; as we have already obſerved, all but two have omitted the Branches of Periodical Geography.

Altho' it is not our Deſign here to treat of Special Geography, yet it may not be amiſs to obſerve, that every Species of General Geography, has one of Special Geography anſwering to it; thus there are Treatiſes of General Ancient Geography, and Special Ancient Geography; General Eccleſiaſtical, and Special Eccleſiaſtical; General Parallel Geography, and Special Parallel Geography. The firſt Sort handles the General Matters relating to ſuch Species, after the Manner of this Book; thoſe of the ſecond Sort, contain the particular Species of Geography themſelves; ſuch as the Ancient Geography of *Cellarius*; the Eccleſiaſtical Geography of *Carolus a Sancto Paulo*; the Parallel Geography of *Brietius* juſt now mentioned. In like manner there is a Diſtinction of the ſame Nature, between Civil Geography, and Civil Geography; Modern and Modern Geography; but this Diſtinction of General and Special, is properly confined to the Species of the Hiſtorical Claſs, it being difficult to conſider the other Species in a double View.

It muſt alſo be obſerved, that this Diſtinction of General and Special is peculiar to the Species of the Explanatory Claſs; thus there are Syſtems, and Dictionaries of General Geography, as well as Special Geography; whereas Globes and Maps are not capable of any ſuch Diſtinction; 'tis true, Maps are diſtinguiſhed into General and Special, but that Diſtinction relates to the Quantity and not to the Quality of the Repreſentation.

SECT. III.

The Method of dividing the Matters treated of by General GEOGRAPHY.

TO the foregoing Analyſis of Geography, we ſhall for the Satisfaction of the Reader ſubjoin alſo a Diviſion of the Matters it treats of; which may ſerve farther to illuſtrate the Subject, and give the Reader a View of what Things are to be handled under the ſeveral Species.

Table or Analyſis of Matters.

General Geography.

1. Places.
    1. Kinds,
        1. Natural or Parts of the Earth;
            Continents, Iſlands, Peninſulas, Iſthmus's, Mountains, Plains, Valleys, Deſarts, Lakes, Rivers, Fountains.
        2. Political or human Improvements;
            Cities, Towns, Burroughs, Villages, Forts, *&c.*
    2. Diviſions.
        1. Civil; into
            Empires, Kingdoms, States, Provinces, Diſtricts, *&c.*
        2. Eccleſiaſtical; into
            Patriarchates, Primacies, Archbiſhopricks, Provinces, Dioceſes, Pariſhes.
    3. State Temporary;
        Ancient, Middle, Modern.
    4. Properties,
        1. Terreſtrial;
            Figure, Dimenſion, Situation.
        2. Celeſtial;
            Seaſons, Days and Nights, Cold and Heat, Shadows, *&c.*
2. Doctrines or Methods of
    1. Exhibiting Places, by
        1. Applying the Circles of the Sphere to the Earth;
            Meridians, Parallels, Horizon, *&c.*

   2. Projecting the
      1. Terreſtrial Circles, for
         1. Round Surfaces,
         2. Flat Surfaces.
      2. Rhumb Lines.
2. Aſcertaining the
   1. Properties of Places, by
      1. Bearing and Diſtance:
      2. Longitude and Latitude.
   2. Meridian Line, Content of a Degree, and Proportion of Meaſures.
3. Form of Exhibiting, by
   1. Repreſentation;
      1. Globes and
      2. Maps.
   2. Tables Synoptical.
   3. Explanation or Treatiſe;
      1. Syſtems.
      2. Dictionaries.

The Two Methods compar'd. The Difference between theſe Two Diviſions is obvious at firſt ſight; but whereas, the Reader may be deſirous to know which of the Two Methods is beſt to follow in treating of *General Geography*; it muſt be obſerved, that both have their Inconveniencies: if you range the Matters according to the Kinds, as in the Second Table, the Scientifical Order will be deſtroy'd, the Things contain'd under different Species will be mixt together, and the Species themſelves diſappear; on the other hand, if you diſtribute them according to the Diviſion of Geography in the Firſt Table, Things of a Kind will be ſeparated, ſcattered and treated of by Piece-meal in different Parts of the Work.

The Laſt preferr'd. To Some therefore, the Firſt Method may ſeem moſt convenient as being more ſimple and eaſy to be followed; but the laſt is more fit for treating of it to Advantage, inaſmuch as by giving a Diviſion of the Sciences, as well as the Matters belonging to it, it affords Occaſion of introducing a Variety of Particulars, very eſſential to a thorough Knowledge of Geography; which are in a great Meaſure incompatible with the Firſt Method, add to this, that the Laſt Method of handling Geography is more curious, and gives a certain Dignity to it which other Sciences want. And theſe are the Reaſons that have induced us to follow it in the enſuing Work.

PART II.

CONTAINING

Mathematical GEOGRAPHY.

OF

MATHEMATICAL GEOGRAPHY,

And Its Branches.

Mathematical Geography comprizes that Part of Geography which it borrows from Mathematics.

End.] Its End is to furniſh Methods for exhibiting Places and aſcertaining their Properties, Terreſtrial and Celeſtial.

Object.] Of the three Sorts of Situations to which, (as we have before obſerved) the Terreſtrial Properties may be reduced, the Abſolute and Relative fall under the Conſideration of Mathematical Geography.

Diviſion.] The Mathematical Sciences whoſe Aſſiſtance Geography requires, are Aſtronomy and Geometry:

Hence Mathematical Geography may be ſubdivided into Aſtronomical and Geometrical.

BOOK I.

Aſtronomical GEOGRAPHY.

CHAP. I.

The Definition, End and Hiſtory of Aſtronomical GEOGRAPHY.

Definition.] ASTRONOMICAL Geography takes its Name from the Share which Aſtronomy has in the Science. 'Tis by ſome made a grand Branch or Diviſion of Geography (a): Others make it a Species of Mathematical Geography (b); and Others ſeem to comprize every Thing under it which belongs to Mathematics (c). But we reſtrain it purely to thoſe Things which the Science borrows from Aſtronomy.

End and Uſe.] The End of Aſtronomical Geography is to deſcribe the Earth according to the Principles of Aſtronomy.

The great Excellence of Aſtronomical Geography conſiſts in this, that it exhibits Countries in the ſame Manner as they exiſt on the Earth, ſo as to ſhew not only how Places are ſituated relatively in reſpect of one another; (which is performed by the Geometrical Methods) but alſo abſolutely in reſpect of the Earth itſelf; in Conſequence of which, we know the Proportion which any Part of the Earth bears to the whole Surface, and the particular Spot where every Place is ſituated, which are Advantages of the utmoſt Importance to Geography, and not to be obtain'd from Geometry.

In ſhort, when the moſt exact Map has been made of a Country, by Geometrical Methods, yet we are ſtill at a Loſs what Part of the Earth to aſſign it to, not knowing whether it lies under the Frozen or Torrid Zone; whether to the North or South of the Line; or how far diſtant from another remote Country; till Aſtronomy has determin'd its Place on the Globe. It belongs to Geometry therefore, to delineate or draw particular Maps of Countries, and when it has perform'd its Part, Aſtronomy is neceſſary to fix the Situation of each with reſpect to the Earth itſelf.

(a) Sanſon Introd. a la Geogr. Pream. Part. 2. p. 100. (b) See Caſtel Math. Univ. p. 178. (c) See Sanſon ubi ſupr. Ozanam. Dict. Math. p. 331.

Hiſtory.] The Aſtronomers who were the firſt Geographers, perceiving the Defect of the Geometrical Methods, began to ſeek for a Remedy from Aſtronomy.

They conſidered, that by means of the Correſpondence which the Parts of the Earth have with thoſe of the Heavens, Places might be ranged according to Meridians and Parallels like the Stars, and their Situations determined by means of their vertical Points.

Accordingly, they began to obſerve the Altitude of the Pole with Gnomons (a), and to compare the Parts of the Earth with the correſponding Parts of the Heavens.

They alſo took Notice, that Eclipſes of the Stars and Planets were ſeen in different Parts of the Earth at different Hours; but did not yet put them to the Uſe, for which they deemed them fit.

Geography ſeems to have continued in this State, till the Time of *Hipparchus* the *Bithynian*, about 160 Years before Chriſt. That Prince of ancient Aſtronomers taught more expreſly, that Geography could not be put upon a tolerable footing, nor the Situations of Places determined without Aſtronomical Obſervations (b): He invented the Planiſphere, whereby he laid the Foundation of a true Projection for Maps, which hath been of late much improved by Optics: and it is highly probable, he firſt introduced the Terreſtrial Globe, inſcribed with Meridians, Parallels and other Celeſtial Circles; according to which Places were to be ranged thereon. The Honour, therefore, of reducing Geography to its preſent Form, ſeems to be due to *Hipparchus*; for tho' *Ptolomy* has been thought by ſome of the Ancients (c), as well as moſt of the Moderns (*A*), to have given the Aſtronomical Form to Geography; yet that Miſtake has been corrected by an Ancient Geographer near his Time, who informs us, *Ptolomy* invented nothing of his own, but in what he did follow'd the Opinion of the Ancients (a). It even appears from *Ptolomy* himſelf, that *Marinus Tyrius* before him, regulated his Maps by Meridians and Parallels; and adjuſted the Bounds of the Earth by Aſtronomical Obſervations (b).

(a) See Latitude. (b) Strabo, L. 1 & 2. (c) Vid. Agathemer. Geogr. L. 1. c. 6. p. 17. ap. Hudſon Geogr. Vet. Græc. Vol. 6.

(*A*) Particularly *Varenius* and *Cellarius*, by whoſe Authority *Vallemont*, *Du Freſnoy* and Others, ſeem to have been led into that Opinion. *La Martiniere*, not only ſays, *Ptolomy* apply'd Aſtronomy to Geography (*a*), but that before Chriſt neither the *Greeks* nor *Romans* cultivated Geography (*b*), which is a great Overſight.

(*a*) See La Martin. I. Eſſay ſur l'Origi & les Progr. de la Geogr. p. 75. ap. Mem. Hiſtorique. Tom. 3. (b) Ibid. p. 59.

Aſtronomical Geography was improved very little among the *Greeks* or *Romans*, after the Time of *Hipparchus*; the moſt that *Ptolomy* ſeems to have done, was to explain the Planiſphere of that great Aſtronomer more fully, and vindicate the Juſtneſs of it againſt the Objections of his Contemporary *Marinus Tyrius* (c). The *Arabs*, *Perſians*, and Other *Orientals*, by improving Aſtronomy, and inventing more accurate Inſtruments, (and amongſt the reſt, perhaps the Compaſs as well as the Pendulum) improved thereby Aſtronomical Geography alſo; but the *Europeans* till of late Ages wholly neglected it. This was owing chiefly to the Bigottry of the Chriſtian Divines (d), who too ſuperſtitiouſly adhering to the Letter of Scripture, fell back to the old exploded Opinions, denying the Antipodes, and holding the Earth to be a Circular or Square Plain, which abſurd Notions obtain'd till the 15th Century; for about the End of the 14th, it was the common Opinion of Divines that the Earth was flat; and even *Toſtatus*, a few Years before the Diſcovery of *America*, rejected the Opinion of the Spherical Figure of the Earth, as a raſh Doctrine and inconſiſtent with the Chriſtian Faith (e); but that Diſcovery having ſupported Reaſon by Experience, Geography began to be cultivated upon the ancient Plan, which ſuppoſed the Sphericity of the Earth. Thus by Degrees Aſtronomical Geography took Place, and completed the Science, by ſupplying what was wanting to render Geometrical Geography perfect.

Object.] Aſtronomical Geography has for its Object both the Terreſtrial and Celeſtial Properties, furniſhing Methods for exhibiting and aſcertaining them.

But it muſt be obſerved, that of the two Sorts of Situations to which the Terreſtrial Properties may be reduced, the Abſolute falls more immediately under the Conſideration of this Species, whence it may be called the Aſtronomical Situation.

Before we proceed to the Methods preſcribed by Aſtronomy, for exhibiting and aſcertaining the Properties of Places, it will be neceſſary to explain the Principles on which thoſe Methods are grounded, and the ſeveral Terms relating thereto; in order to this, we ſhall conſider, 1. The Origin and Foundation of the Artificial Sphere. 2. The Application of the Sphere to Geography. 3. The Point and Lines conceiv'd to exiſt within the Body of the Earth. 4. The Points deſcribed on the Surface of the Globe of the Earth. 5. The Circles of the Sphere tranſferr'd on the Terreſtrial Globe or Earth. 6. The Aſtronomical Diviſion of the Earth by Lines and Circles of the Sphere. 7. The Aſtronomical Situation of Places. 8. The Explanation of the Terreſtrial and Celeſtial Properties according to the Terreſtrial Circles.

(a) Vid. Agathemer Geogr. ubi ſupr. (b) Ptol. Geogr. L. 1. c. 7. (c) See Projection. (d) Lactant. L. 3. c. 24. Auguſt. de Civit. Dei, L. 16. c. 9. ap. Varen. Geogr. Gen. c. 3. p. 19. (e) Montfauc. Not. ad Coſmæ Topograph. Chriſtian. ap. Collect. Nov. Patr. Vol. 2.

CHAP. II.

Of the Origin and Foundation of the Artificial Sphere.

Sphere.] Fig. 1. THE Doctrine of the Sphere muſt be allow'd to be one of the moſt admirable Inventions of the Wit of Man.

The Ancients obſerved, that all the Stars turn'd (at leaſt in Appearance) round the Earth, from Eaſt to Weſt in 24 Hours; and, that in turning they deſcribed Circles Parallel to each other, but not of the ſame Magnitude; thoſe over the Middle of the Earth deſcribing much greater Circles, than thoſe which lie farther off on one Side or the other, and whoſe Circles are ſmaller in Proportion to their Diſtance. They alſo obſerved, that there are two Points in the Heavens which have always the ſame Situation. Theſe Points, which are as the Center of the Motion of all the Circles, they named *Celeſtial Poles*, becauſe the Heavens ſeem'd to turn round them; and in their Artificial Spheres imitated this Motion by means of an Iron Rod or Wire, which they call'd the Axis, whoſe Extremities were faſten'd to thoſe immoveable Points (a).

They farther remark'd, that on the 20th of *March* and 23d of *September*, the Motion of the Sun for 24 Hours was equidiſtant from both Poles, and that this Motion might be repreſented by a Circle, which has been called the *Equator*, becauſe it divides the Earth into two equal Parts; or *Equinoctial Line*, becauſe when the Sun moved in that Circle the Days and Nights were every where equal. Having alſo obſerved, that from the $\frac{10}{21}$ of *June* to the $\frac{11}{22}$ of *December*, the Sun advanced every Day towards a certain Point, and that as ſoon as he had arrived there, he returned toward that from whence he ſet out, from the $\frac{11}{22}$ of *December* to the $\frac{10}{21}$ of *June*, where being arrived, he began a-new to decline from it. They therefore fixed theſe Points, which they called the Points of the *Solſtices*, and repreſented thoſe Bounds of the Sun's Motion by two Circles, which they named *Tropics*, from the *Greek* Word, ſignifying to *turn back*, becauſe the Sun, as ſoon as he had arrived there turn'd back again (a).

(a) See Chamereau, Geogr. Pratiq.

The Aſtronomers examining more nearly the Motion of the Sun, farther obſerved, that the Quantity by which he acceded or receded daily from the *Equator*, was about a Degree; and that in a Year he deſcribed a Circle in the Heavens, which paſſing thro' certain Conſtellations, they called the *Zodiac*, from the Animals repreſenting thoſe Conſtellations. This Circle touches the *Tropic* of *Cancer* on one Side, and on the other that of *Capricorn*, and cuts the *Equator* obliquely. To expreſs this Motion, they ſuppoſed two Points in the Heavens equally diſtant and Parallel to this Circle, which they call'd the *Poles* of the *Zodiac*, which turning with the Heavens by means of their *Axis* deſcribe the two *Polar Circles*.

In the Artificial Sphere, the *Equinoctial*, the two *Tropics*, and two *Polar Circles* are ſuſtain'd and cut at Right Angles by two other Circles, named *Colures*, which ſerve to mark the Points of the *Solſtices*, *Equinoxes* and *Poles* of the *Zodiac*.

They alſo took Notice, that when the Sun was in any Point of his Courſe, all the People inhabiting directly North and South as far as the Poles, have Noon at the ſame Time. This gave occaſion to imagine a Circle paſſing thro' the Poles of the World, which they call'd a *Meridian*, and is immoveable in the Artificial Sphere as well as the *Horizon*; which is another Circle repreſenting the Bounds of the *Hemiſphere*, that appears to the Inhabitants of any Place, and ſeems to divide the viſible Half of the Heavens, or that which is above it, from the inviſible Half, which is below or under it.

Having thus briefly ſhewn the Origin of the Sphere, let us proceed to the Application of it ſo far as is neceſſary to Geography.

CHAP.

(a) Chamereau Geogr. ubi ſup.

Fig: 1. p. 55 & 57.

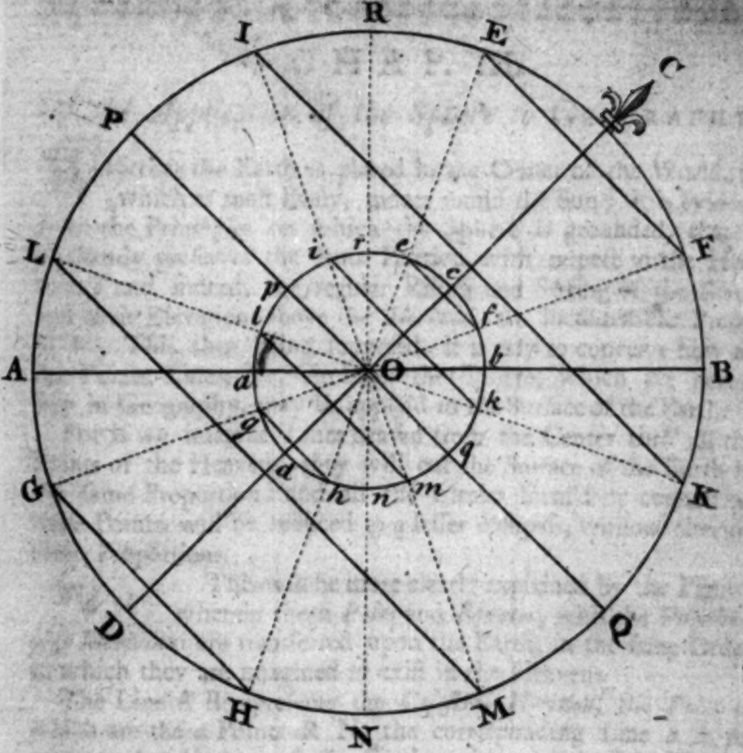
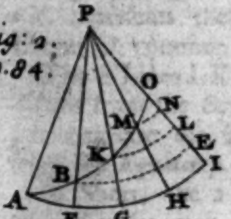


Fig: 2. p. 84.



CHAP. III.

Of the Application of the Sphere to GEOGRAPHY.

WHether the Earth is placed in the Center of the World, or which is moſt likely, moves round the Sun; it is evident from the Principles on which the Sphere is grounded, that it conſtantly preſerves the ſame Poſition with reſpect to the Heavens; and indeed, the regular Riſing and Setting of the Stars, and their Elevations above the *Horizon*, are inconteſtible Proofs of it. This then being ſuppoſed, it is eaſy to conceive how all the Points, Lines, &c. Circles of the Sphere, which are neceſſary in Geography, may be apply'd to the Surface of the Earth.

For if we imagine Lines drawn from the Center thro' all the Points of the Heavens, they will cut the Surface of the Earth in the ſame Proportion; and all the Circles form'd by connecting thoſe Points, will be reduced to a leſſer compaſs, without altering their Proportions.

Fig. 1. This will be more clearly explained by the Figure, wherein the 2 *Poles* and *Equator*, with the *Parallels* and *Meridians* are transferred upon the Earth, in the ſame Order in which they are imagined to exiſt in the Heavens.

The Line A B repreſents the *Celeſtial Horizon*, the *Poles* of which are the 2 Points R N; the correſponding Line *a b*, repreſents the *Horizon* of the Earth, with regard to the Place *r*, the *Zenith* of which is R, and the *Nadir* N.

The 2 Points C D repreſent the *Poles* of the World, as the correſponding Ones *c d* do thoſe of the Earth; and the Line C D repreſenting the *Axis* of the Heavens, the correſponding Line *c d*, repreſents the *Axis* of the Earth, which paſſes thro' the Center O, common to both the Heavens and Earth.

The 2 Lines I K, L M, are the *Celeſtial Tropics*, each 23° ½ diſtant from the *Equinoctial* P Q and the 2 correſponding Lines *i k*, *l m*, are the *Terreſtrial Tropics*, at the ſame Diſtance each from the *Equator p q*.

In Short, the 2 Lines E F, G H, repreſent the *Celeſtial Polar Circles*, each 23° ½ diſtant from its *Pole*, and their Correſpondents *e f*, *g h*, exhibit the *Terreſtrial Polar Circles*, at the ſame Diſtance from their reſpective *Poles*.

It is evident, that the Circle A R B N is a *Meridian* of the Heavens, and conſequently *a r b n* is a *Meridian* of the Earth, and that each of them is a *Horizon* of the Right Sphere. It is evident alſo, that the Arch B C is the Elevation of the *Pole* above the *Horizon* A B equal to the Latitude P R; and that the Arch A P is the Elevation of the *Equator* above the ſame *Horizon* A B (a).

If you take the inner Circle *a r b n*, which repreſents the Surface of the Earth, for the *Horizon* of any Place thereon, and mark the Points *c d*, and *q p*, thro' which it is cut from North to South, and from Eaſt to Weſt; a Spectator from O, ſuppoſed to be the Center of the *Horizon*, may apprehend how the Ancients and Moderns diſtinguiſh the Quarters or Regions of the World and the four Cardinal Points. And if you proceed farther, between the foregoing Points to mark ſeveral intermediate Ones; Some to the Eaſt, as *f b k m n b*, *&c.* Others to the Weſt, as *e r i l a g*, *&c.* thro' which the Horizon is cut by the *Polar Circles*, *Tropics*, *Equator*, &c. till they amount in all to 32; and then imagine from thoſe Points ſo many Winds to blow towards O, you may apprehend the Regulation of the Compaſs and Diviſion of the Earth by *Lines of Poſition* or *Rhumbs*.

The ſeveral Points, Lines and Circles of the Sphere being thus tranſlated to the Earth, become purely Terreſtrial or appropriated thereto, aſſuming a Geographical Uſe; nor muſt they be confounded with the Celeſtial to which they correſpond, as moſt Authors have done; who, becauſe they draw their Original from the Latter and retain the ſame Names, conſider them ſtill as the ſame, without obſerving the neceſſary Diſtinctions.

Uſe.] Theſe Terreſtrial or Geographical Points, Lines and Circles ſerve to explain and deſcribe the Surface of the Earth, in the ſame Manner as the Celeſtial or Aſtronomical Ones do the Heavens.

By them we readily diſcover the Situation of the Parts of the Earth in reſpect of one another and of the whole; what Countries are moſt hot, temperate and cold; thoſe Parts where the Seaſons of the Year are alike or contrary at the ſame Time; thoſe which enjoy the ſame Temperature at the ſame or different Times; Thoſe which have Noon at the ſame Inſtant, ſooner or later, or at contrary Times; Thoſe which have Night when the Others have Day; and diſtinguiſh thoſe Parts where the Days are under 24 Hours, from Thoſe where they conſiſt of one or ſeveral Natural Days ſucceſſively (b); with all the other Properties Terreſtrial and Celeſtial.

Theſe Things will appear more fully in the Explanation which we are going to give, of the ſeveral *Points*, *Lines* and *Circles* abovementioned.

CHAP.

(a) Ozanam. Dict. Math. p. 331, & ſeqq. (b) Sanſon Introd. a la Geogr. p. 101, 102.

CHAP. IV.

Of the Points, Lines *and* Circles, *conceiv'd to be apply'd to the Earth.*

OF theſe *Points*, *Lines* and *Circles*, ſome are conceived to exiſt within the Body of the Earth, others to be deſcribed on its Surface.

Point within the Earth.] In the Globe of the Earth we conceive a *Point* which is the *Center*, and three *Lines* or *Axes*; 1ſt. of the *Earth*; 2d. of the *Zodiac*; and 3d. of the *Horizon*.

§ 1. The Center of the Earth is a Point, which we conceive to be in the middle of this Globe, from which Point all the Lines drawn to its Surface are equal among themſelves, and each of them makes half a Diameter.

The Center ſerves for a Foundation and Baſis to the Semidiameters, and is the Center of all the Great Circles deſcribed upon the Surface of the Earth; and was the *Ptolomaic* Syſtem to take place, would be the Center of the Univerſe.

Lines within the Earth.] § 2. The Axis of the Earth is that Diameter which paſſes between the two Points in the Surface of the Earth; One in the North, the Other in the South, which we call *the Poles of the Earth*, and is extended both Ways to the Heavens.

This *Axis*, beſides marking the 2 *Poles* by its Extremities, ſerves alſo for the Globe of the Earth to turn upon within the Heavens, in performing its Diurnal and Annual Revolutions; or according to the vulgar Opinion, grounded on the apparent Motion of the Sun and Stars, the Heavens turn round upon it.

§ 3. The *Axis* of the *Zodiac*, is that Diameter which by its Extremities deſcribes the *Polar Circles*; and round which the 12 Signs are conceived to perform their Courſe.

§ 4. The *Axis* of the *Horizon*, is the Diameter whoſe Extremities regard the *Zenith* and *Nadir* of each Place.

On the Surface of the Globe many Points and Circles are conceived to be deſcribed.

Points on the Surface.] The chief Points are twelve; 2 *Polar*, 2 *Vertical* 4 *Cardinal*, and 4 *Collateral*.

The Polar.] § 1. The *Poles* of the Earth are 2 fixt and immoveable Points which terminate the *Axis* of the Earth.

They are called *Poles* from πολέω, *verſo*, *to turn*, becauſe the Earth is ſuppoſed to turn upon thoſe Points, and are known by the *Poles* of the Heavens under which they lie, not being to be diſcovered themſelves at a Diſtance; they are alſo call'd the *Vertices* and *Cardines Mundi*.

One of theſe *Poles* is call'd, like that of the Heavens, *Arctic*, and *Septentrional*, becauſe of the Conſtellation of the *Bear* which is near it, call'd by the *Greeks Arctos*, and *Septentrio* by the *Latins*; as being compoſed of 7 Stars, one of which, *viz.* that at the End of the Tail of the *Little Bear*, call'd the *Pole Star*, is but 2 Degrees and ſome Minutes diſtant from it.

The Other is call'd *Antarctic*, becauſe it is diametrically oppoſite to the *Arctic*; and lies under the correſpondent *Pole* in the Heavens, which is known by means of 4 Stars, named the *Croſs*, about 12 or 15 Degrees diſtant.

The Knowledge of theſe *Poles* are of great Uſe to the Geographer, in determining the Diſtances and Situation of Places: For the *Poles* mark as it were the Ends of the Earth, which is divided in the Middle by the *Equator*; ſo that the nearer one approaches the *Poles*, the farther he removes from the *Line*; and contrarywiſe, in removing from the *Poles* you approach the *Equator*.

It muſt alſo be obſerved, that thoſe who are under the *Line* perceive that the *Poles* touch the *Horizon*; and that receding from the *Line*, they are ſeen to riſe inſenſibly above it; inſomuch that the more one approaches the *Pole*, the more it ſeems to be elevated; and on the contrary, the oppoſite *Pole* diſappears entirely and becomes as much depreſs'd. Hence the *Elevation*, or *Altitude* of the *Pole* above the *Horizon* ſerves to find the Latitudes of Places, which are nothing elſe but their Diſtance from the *Equator*; for the greater the *Elevation* of the *Pole*, the greater the Diſtance of the *Equator*, which may amount to 90 Degrees, that being the Diſtance between them, reckon'd from the *Equator* (a).

The Vertical.] § 2. The two Points which we call *Vertical*, are the *Zenith* and *Nadir*: Words corrupted from the *Arabic* Terms, *Semt* (in *Semt al râs*, which ſignifies the Point of the Heavens directly over one's Head, or Vertical as we expreſs it) and *Nadhir*, which implies being ſet in Oppoſition to another Thing (a); accordingly every Place on the Earth has theſe 2 Points, and we may be ſaid to carry them along with us where-ever we go, being diametrically oppoſite to each other.

(a) See Chamereau Geogr. Pratiq. p. 11.

The *Zenith* is a Point imagined to be directly over our Heads, and every Time we change our Place our *Zenith* changes alſo.

The *Nadir* is conceived to be directly under our Feet, or over the Heads of our *Antipodes*; but it muſt be obſerved, that as our *Nadir* is their *Zenith*, ſo our *Zenith* is their *Nadir*.

Uſe.] Theſe two Points ſerve for *Poles* to the *Horizon*, point out the Parts whoſe Inhabitants are *Antipodes* to one another and determine the *Meridians* (b).

The Cardinal.] § 3. The four *Cardinal Points*, or *Cardines Mundi*, are ſo call'd by Analogy, becauſe in them the World is turn'd as a Door on its Hinges (c); they indicate the 4 Principal Quarters of the World, and are named *Eaſt*, *Weſt*, *North* and *South*.

The *Cardinal Points* are found every where, excepting in the *Poles*, for there the *Eaſt* and *Weſt* Points are not to be diſtinguiſhed, becauſe the Sun is there always viſible, during the Time of his being viſible, and may be ſaid to riſe in any or every Part of the *Horizon*.

In all other Places, theſe Points are to be found in the *Horizon*, 90 Degrees one from the other; the Northern and Southern reſpect the *Poles* of the Earth, and the 2 Others the Riſing and Setting of the Sun when he is in the *Equinoxes*.

As theſe Points are determined by the Motion of the Sun, they are found by his Shadow; which when he is in the *Equinoxes*, indicates the *Eaſt* and *Weſt* Points (the firſt at Six in the Morning, the latter at Six in the Evening) but at all Times ſhews the *North* and *South* Points at Noon. They are alſo found by help of a Mariner's Compaſs, for the Magnetical Needle always turning towards the *North*, at the ſame Time ſhews the *South* which is oppoſite to it, as well as *Eaſt* and *Weſt* which cut the Meridian Line at Right Angles (d).

The Collateral.] § 4. Beſides the 4 *Cardinal Points*, there are ſeveral intermediate Ones, which may be conceived to be as many as the Degrees or Minutes which the *Horizon* is divided into; but Mathematicians content themſelves with 28, diſtinguiſhed by the Names of the Winds which blow from them.

The

(a) Vid. Golii. Lex Arab. ad voc. (b) See Sanſon Introd. a la Geogr. p. 108. (c) Alſted. Encyclop. Tom. 1. p. 534. (d) See Chamereau, ubi ſup. p. 12.

Uſe.] The Uſe of the *Cardinal* and *Collateral Points*, is to inform us how the Parts of the Earth are ſituate or bear, in reſpect of any particular Place or of one another; they afford a Foundation for the Diviſion of the Earth by *Lines* of *Poſition* or *Rhumbs*, as well as Means to regulate and diſtinguiſh the Winds, for compoſing the Compaſs, an Inſtrument of great Uſe in Geography and Navigation; for the *Cardinal Points* being known, the 4 *Cardinal Winds* are alſo known.

Circles on the Surface.] The Circles transferred from the Sphere upon the Terreſtrial Globe or Earth, are commonly reckon'd Ten in Number, and may be conſidered in three Manners;

I. Similar or Parallel, and Diſſimilar or Oblique Circles.
II. Greater and Leſſer.
III. Fixt and Changeable.

1. They reckon 5 Parallel Circles, and 5 Diſſimilar or Oblique; the 5 Parallel are the *Equator*, the 2 *Tropics*, and 2 *Polar* Circles.

The 5 Diſſimilar, which interſect one another obliquely, are, the *Ecliptic*, the *Horizon*, the *Meridian* and 2 *Colures*.

2. The greater Circles are 6 in Number, and the Leſſer 4; the 6 Greater are, the *Equator*, the *Ecliptic*, the *Horizon*, the *Meridian*, and the 2 *Colures*.

The 4 Leſſer; the 2 *Tropics*, and 2 *Polar* Circles.

3. There are 8 fixt and 2 Changeable Circles.

The fixt Circles, which never vary, but always appear in the ſame Places to the Inhabitants of the Earth, let them change their Situation ever ſo often; are the *Equator*, the 2 *Tropics*, the 2 *Polar Circles*, the *Ecliptic*, and the 2 *Colures*.

The Changeable Circles are, the *Horion* and the *Meridian*; which vary as often as one changes Place: But here it is to be conſider'd, that this Change is with reſpect to the Inhabitants of the Earth, who may be ſaid to carry their *Meridan* and *Horizon* about them; for thoſe of every Place are in themſelves fixt and immoveable.

The greater Circles are of equal Magnitude, reſpect the Center of the Earth as their common Center, and divide the Globe into 2 equal Parts (a).

The leſſer Circles are unequal among themſelves, and neither have the ſame Center as the Greater, nor one common to 'em all; but each has a Center peculiar to it, and conſequently divides the Earth into 2 unequal Parts.

(a) Sanſon. Introduct. a la Geogr. p. 110.

Of theſe Circles, Some leave out the 2 *Colures* (a), and Others the *Zodiac* (b), as not appertaining to Geography; and indeed, the Enumeration uſed by Authors is ſuited rather to Aſtronomy or the Artificial Sphere, than the Globe of the Earth, which hath ſome Circles peculiar to it ſelf, and doth not require all which belong to the Heavens.

The Circles therefore which the Earth borrows from the Sphere, may be properly denominated as follow; 1. The *Equator*. 2. The *Parallels*. 3. The *Meridians*. 4. The *Ecliptic*. 5. The *Horizon*.

CHAP. V.

Of the Equator *and* Parallels.

Equator defind.] THE *Equator* is a great Circle, equally diſtant from the *Poles*. It is call'd *Equator*, not, it ſhould ſeem, as many affirm (a), becauſe it cuts the Globe of the Earth into 2 equal Parts, for all the other great Circles have as good a Right on that Account to the ſame Denomination; but rather for the ſame Reaſon that it is call'd the *Equinoctial*, becauſe the Sun coming to this Circle, the Nights and Days are of equal Length. It is call'd alſo the *Equinoctial Line*, and ſimply, by way of Excellency, the *Line*; not ſo much as being of the firſt and principal Note of all the Circles in Geography, but becauſe it is conſider'd by Navigators, from whom the Term came in common Uſe, as a great Line drawn upon the Sea from Eaſt to Weſt, dividing the Globe into the Northern and Southern *Hemiſpheres*, and which they are to paſs in ſailing out of one into the other.

The *Equator*, which is divided into 360 Degrees, is the Origin and Standard of all Meaſures; and by being fixt it ſelf, fixes all the *Parallels* likewiſe.

Uſe.] The Uſe of the *Equator* is, 1. To divide the Globe of the Earth into two equal Parts, call'd *Hemiſpheres*, one the Northern, the other the Southern. 2. To mark the true Points of Eaſt and Weſt, call'd the *Equinoxes*, in all Countries round the Globe. 3. To determine the Courſe and Meaſure of the *Parallels*. 4. It ſerves, as the Baſis for finding and reckoning the Latitudes. Longitude is alſo reckon'd on this Circle, which ſerves for many other Uſes (a).

(a) Vid. Gordon Geogr. Gram. (b) Sanſon ubi ſupr. p. 109. (c) Ibid. .110. (d) See Ozanam Dict. Math. p. 172. Gordon Geogr. Gram. p. 5.

Parallels defin'd.]

The *Parallels* are ſo call'd, as being *Parallel* to the *Equator*, which is commonly accounted the firſt and chief of them by the Moderns, tho' the Ancients deny'd it the Name of a *Parallel* (b).

The *Parallels* are all leſſer Circles, equidiſtant and concentric, lying one within another; but not of equal Magnitude, being ſmaller near the *Poles*, and greater near the *Equator*.

They are diſtinguiſh'd by the Moderns into 3 Sorts; 1. *Parallels* of Diſtinction. 2. Artificial or Horary *Parallels*. 3. *Parallels* of Latitude. Altho' the Ancients made no Diſtinctions of this Sort; what they call'd *Parallels* were of the 2d Kind.

I. PARALLELS of Diſtinction.

Among the *Parallels* there are four, which from their Uſes become more remarkable than the reſt; whence we have given them the Name of *Parallels* of *Diſtinction*. Some call them *Named Parallels*, becauſe they have particular Names which the reſt have not (c); Others *Parallels* of *Zones*, becauſe they bound the *Zones* (d); whence it follows, that this is the moſt ancient Diſtinction of *Parallels*.

The four *Parallels* belonging to this Claſs, are, the 2 *Tropics*, and the 2 *Polar Circles*.

1. The *Tropics* are the greateſt of the 4 leſſer Circles and ſo called *ἀπὸ τῆς τροπῆς, à reditu ſeu Converſione*; becauſe the Sun in his annual Courſe being arrived at one of theſe Circles, doth immediately return.

They are called alſo *Solſtitial Circles* or *Circles* of the *Solſtices*; becauſe the Sun arriving there ſtops without proceeding further (e). The Word *τροπαὶ* ſignifies not only the *Solſtices* but the *Equinoxes*. Likewiſe (f) *Eudemus*, according to *Laertius*, ſaith that *Thales* firſt obſerved the *Tropics*; but *Laertius*, that he firſt found out the *Declination* of the Sun from *Tropic* to *Tropic* (g).

(a) See Sanſon ubi ſupr. p. 111. & ſeq. (b) Vid. Agathem. Compend. Geogr. L. 1. c. 8. p. 28. ap. Hudſon Geog. Vet. Græc. Vol. 2. See Carpent. Geogr. Part 1. p. 211. (c) Ibid. p. 211. (d) Alſted. Encycl. Tom. 1. p. 537. (e) Ibid. p. 393. (f) Stanley, Lives Philoſ. p. 9. (g) Ibid.

They are deſcribed at different Times by the Sun, are *Parallel* to the *Equator*, and 23 Degrees 29 Minutes diſtant from it.

That which lies on the North Side of the *Equator* is call'd the *Tropic of Cancer*, becauſe its Correſpondent in the Heavens, whence it takes its Name, paſſes thro' the firſt Point of that Sign. 'Tis alſo call'd with us the *Summer* and *Northern Tropic*: The other is call'd the *Tropic of Capricorn*, alſo the *Southern* and *Winter Tropic*, for the like Reaſon.

Uſe.] The 2 *Tropics* bound the Courſe, and conſequently ſhew the greateſt Declination of the Sun, which moving in a Spiral Line, by turns comes to both, but never paſſes beyond them.

They mark upon the *Ecliptic* the two Points of the *Solſtices*, bound the *Torrid Zone*, and divide it from the *Temperate Ones*.

The Polar Circles.] 2. The *Polar Circles* are the 2 leaſt of the 4 leſſer Circles, running Parallel to the *Equator*, and at the ſame Diſtance from the *Poles* as the *Tropics* are from the *Equator*.

They are deſcribed by the *Poles* of the *Ecliptic*; that which goes round the *North Pole* is call'd the *Northern* or *Arctic Circle*; the other on Account of the Vicinity of the *South Pole*, is call'd the *Southern* or *Antarctic Circle*.

It is to be obſerved, that the *Arctic Circle* of the Ancients included both the *Bears*, whereas that of the Moderns excludes the *Great One*; wherefore ſome are for having the Latter call'd the *Parallel of the Pole of the Ecliptic* (a), becauſe it moves in it or is deſcribed thereby.

Indeed the *Greeks*, as appears from *Proclus* and *Cleomedes*, by the *Polar Circles* underſtood not ſuch as were deſcribed by the *Ecliptical Poles*, but two Others, whereof One was the greateſt of all the *Parallels*, which continually appeared above their *Horizon*; the Other the greateſt which did not appear, or was hid under it; by theſe Circles they diſtinguiſh'd the Stars which never ſet from thoſe which never riſe. So that the *Polar Circles* of the Ancients were not fix'd or of equal Quantities in all Places; but were greater in an Oblique than a Right Sphere (b).

Uſe.] Theſe Circles ſhew the *Poles of the Ecliptic*; incloſe the *Frigid Zones* and divide them from the *Temperate*.

(a) Alſted Encycl. Tom I. p. 538. (b) See Carpent. Geogr. p. 146. and Briet. Parall. Geogr. Part I. L. 2. c. 2.

II. Artificial or Horary Parallels.

The *Artificial Parallels* are ſo call'd, becauſe they bound and divide the *Climates*, which diſtinguiſh the various Lengths of the Artificial Day; whence they may be call'd alſo *Climatical Parallels*.

They may be conſider'd alſo abſolutely, as marking the Intervals of the Days Increaſe independent of the *Climates*; whence alſo, they may be call'd *Horary Parallels*.

But an *Artificial Parallel* is commonly by the Modern Geographers, eſpecially the more early, miſtaking the Senſe of the Ancients, defin'd to be half a Climate; and conſequently not a Circle but a broad Space, including an Horary Interval of a Quarter of an Hour. This Notion we ſhall ſhew to be groundleſs when we come to ſpeak of the Climates.

Hiſtory.] This Order of *Parallels* had its Riſe from hence, that before the Method of finding the *Latitude* by Obſervations of the Stars was found out, and long after, the Ancients determin'd the Situation of Places from North to South by Horary Diſtances; that is, by the Length of the longeſt Day obſerved in each, drawing *Parallels* wherever it increaſed, ſometimes by a Quarter of an Hour, ſometimes by Half an Hour, by a whole Hour, and at laſt by a Month (a).

The Ancient *Greeks* in their Aſtronomical Diviſions of the Earth, confining themſelves to ſo much as was inhabitable or known to them; at firſt there were but 8 *Artificial* or *Horary Parallels* in Uſe, according to the Number of their *Climates*, which they bounded, drawn at the Diſtance of Half an Hour.

Afterwards, Diſcoveries increaſing, the Number of *Parallels* increas'd, ſome being drawn at leſſer, ſome at greater Horary Intervals as above-mentioned; ſo that in the Time of *Ptolomy* there were 23 *Parallels* in Uſe, tho' he taught how the whole Surface of the Earth might be divided by them (b) after the Manner of ſome of the Moderns, who make 24 of half Hours, or 48 of Quarters of an Hour, between the *Equator* and the *Polar Circles*, and 6 of Months between thoſe *Circles* and the *Poles*; ſo that they reckon 60 *Parallels* of one Sort and 108 of the other. However, there is great Variety of Opinions among the Modern Geographers about the Method of drawing the *Parallels*, which moſt of them, eſpecially the Earlieſt, confound with the *Climates*, as ſhall be ſhewn when we come to ſpeak of them; in which Place, ſeveral other Matters relating to *Artificial Parallels* will be explained.

(a) See Climates. (b) Ibid.

By degrees they gave Place to *Parallels* of *Latitude*, ſo that at preſent they are grown almoſt wholly out of Uſe in Geography.

Uſe.] The Uſe of the *Artificial Parallels* is, Primarily, to mark the Intervals when the Length of the longeſt Day increaſes by any Quantity of Time; and by Means thereof, Secondarily, to determine the Degree of *Latitude* or Diſtance of Places from the *Equator*. *Longitude* may be reckon'd on the *Artificial Parallels* as on the *Parallels of Latitude*.

III. Of the Parallels of *Latitude*.

The *Parallels of Latitude* are ſo denominated, becauſe they diſtinguiſh the Degrees of *Latitude* or Diſtance of Places from the *Equator* towards either *Pole*; they ſtand oppoſed to *Parallels of Hours* or *Artificial Parallels*, from which they differ in ſeveral reſpects. 1ſt. In that the Office of the *Parallels of Latitude* is immediately and ſolely to mark the Degrees of *Latitude*; whereas the *Parallels of Hours* do it mediately by a Secondary Uſe. 2d. The *Parallels of Latitude* are regulated according to the Degrees of *Latitude* found by Obſervations of the Height of the *Pole*; *Parallels of Hours* according to the greateſt Length of the Day in different Places. 3d. The *Parallels of Latitude* are drawn at equal Diſtances, becauſe the Degrees of *Latitude* are always equal; the *Horary Parallels* at unequal Diſtances, becauſe the Intervals wherein the Day increaſes by equal Quantities of Time are unequal. 4th, The Number of the *Parallels of Latitude* is unlimited; that of the *Artificial Parallels* cannot conveniently be drawn at ſhorter Intervals than thoſe of Quarters of an Hour, from all which Inſtances it appears that the *Parallels of Latitude* are the moſt commodious of the Two.

Every Place has its *Parallel*, which is found by its *Zenith*; ſo that one may imagine as many *Parallels* as there are Vertical Points from *North* to *South*.

The *Parallels* interſect the *Meridians* at Right Angles, and are reckon'd from the *Equator* towards either *Pole* 90° to the *North*, (ſuppoſing them to be drawn at every Degree of the Earth's Circumference) and as many to the *South*, in all 180.

Uſe.] The *Parallels* regulate and exhibit the *Latitude* or Situation of Places from *North* to *South*, which is reckoned on the *Meridians*.

They ſerve alſo to reckon the *Longitudes*, beginning at the firſt *Meridian*, and proceeding by them from *Eaſt* to *Weſt*, or from *Weſt* to *Eaſt*, whence they are call'd *Secondaries of Longitude*; the *Equator* is of chief Uſe in this reſpect, the Degrees of *Longitude* being numbered thereon.

CHAP. VI.

Of the Meridians *and* Ecliptic.

SECT. I.

Of the Meridians.

THE *Meridian* is a great Circle which paſſes thro' the *Poles* of the Earth, interſecting the *Equator* at Right Angles, and divides its Globe into 2 *Hemiſpheres*, the *Eaſtern* and the *Weſtern*.

It is call'd Μεσημβρινὸς by the *Greeks* (a), and by the *Latins Meridianus*, becauſe when the Sun ſtands directly over this Circle, or comes to that correſpondent to it in the Heavens, it is *Meridies*, that is *Noon Day* to all thoſe who inhabit along that Half of the Circle expoſed to the Sun, and it is Midnight with thoſe who live on the oppoſite Part.

Thales firſt taught, that the *Equator* and *Tropics* was cut by the *Meridian* at Right Angles from *Pole* to *Pole* (b): *Sanſon* ſays, the Ancients gave the *Meridians* the Name of *Longitude*, but we do not find they were uſed as ſynonymous Terms.

Difference. The *Meridians* differ from the *Parallels* in ſeveral reſpects; the *Meridians* divide the Earth into equal Parts or *Hemiſpheres* from *North* to *South*, the *Parallels* into unequal Parts from *Eaſt* to *Weſt*.

The *Meridians* are great Circles; the *Parallels* leſſer Circles: the *Parallels* run Parallel to the *Equator* and one another, the *Meridians* interſect one another obliquely.

The *Meridians* incline gradually as they approach the *Poles*, but the *Parallels* are equidiſtant.

The *Meridians* are numbred, beginning at the prime or firſt *Meridian*, and proceeding *Eaſtward* or *Weſtward* to 180 Degrees; the *Parallels* are numbred, beginning at the *Equator*, and proceeding *Northward* and *Southward* to 90 Degrees where they center in the *Poles*.

The *Parallels* are fixt, the *Meridians* moveable Circles.

(a) Agathemer Compend. Geogr. Lib. 1. cap. 6. p. 18. ap. Hudſon Geogr. Vet. Græc. Vol. II. (b) Plutarch de Placit. Philoſ. ap. Stanley Lives Philoſ. p. 9.

Every Place has its *Meridian*, which is found by means of its *Zenith*, ſo that one may imagine as many *Meridians* as there are *Vertical Points* from *Eaſt* to *Weſt*; reckoning them on the *Equator*, which they interſect at Right Angles, as they do all the other *Parallels*.

Theſe *Meridians* may be conſider'd either as intire Circles or Semi-Circles.

Conſider'd as intire Circles interſecting one another in the *Poles* and drawn thro' every Degree of the *Equator*, there will be 180 *Meridians*; but conſider'd as Semicircles terminating in the *Poles*, there will be 360, which may be call'd *Single* or *Semi-Meridians*, and it is in this Manner Geographers conſider them.

The *Single Meridians* therefore as *Semicircles* incline to one another as they approach the *Poles* in a certain Proportion (a).

Of theſe *Meridians* there are 2 Sorts, the Prime and Secondary; the Prime or firſt *Meridian* is, that from whence the other *Meridians* and *Longitude* is reckon'd.

All the reſt are Secondaries (b), by ſome call'd *Common Meridians* (c), which are reckon'd round the Globe: or more properly *Eaſtward* and *Weſtward* of the *Firſt*, till they meet at 180 Degrees.

But this *firſt Meridian*, which ought to correſpond to the univerſal *Meridian*, or that drawn thro' the Poles and Center of the Sun is arbitrary and variable: None of the *Meridians* being fixt among themſelves by Nature, as the *Equator* is among the *Parallels* (d); which hath given occaſion to the Geographers of every Nation to chuſe a *Firſt* at Pleaſure. The *French* alone are debarr'd that Privilege, by an Ordonnance of *Lewis* the XIII, dated 13 *April*, 1634, which obliges them to eſtabliſh their *Firſt Meridian* at *Ferro* one of the *Canary Iſlands* (e).

Uſe.] 1. The *Meridian* regulates and exhibits the *Longitude*, or the Situation of Places from *Eaſt* to *Weſt*, which is reckon'd on the *Equator* and *Parallels*.

2. The *Meridian* ſerves to determine the Altitude of the Pole, and the Diſtance of the *Equator* or the *Latitude*; becauſe the Arch of the *Meridian* comprized between the *Equator* and *Zenith*, and intercepted between the *Horizon* and the *Pole* are equal.

3. It points out Noon and Midnight to all thoſe who are in its Circle; begins the Aſtronomical Natural Day at Noon, and the Civil at Midnight; divides the Artificial Day into 2 equal Parts.

4. It ſerves to reckon the *Latitudes*, beginning at the *Equator* and advancing towards either *Pole*, whence it is call'd a *Secondary of Latitude*.

SECT.

(a) See Longitude. (b) Sturm. Math. Juvenil. Vol. 1. p. 401. (c) Carpent. Geogr. Part 1. p. 132. (d) See Firſt Meridian. (e) Ibid.

SECT. II.

Of the Ecliptic.

THE *Ecliptic* ſignifies the Line of the Eclipſes, becauſe the Eclipſes of the Sun and Moon happen thereon.

It was probably found out by *Thales*, ſince according to *Eudemus* in *Laertius*; he firſt diſcovered Eclipſes (a), and the *Obliquity* of the *Zodiac*.

The *Ecliptic* is the high Road of the Sun, dividing the *Zodiac* (which cuts the *Equator* obliquely, and is the only Circle in the Heavens that admits of *Latitude* or *Breadth*, being 16 Degrees broad) in the Middle. It contains 12 *Aſteriſms*, commonly call'd the 12 *Signs*, named from ſo many different Animals, whence the *Zodiac* takes its Name, *Zôon* in *Greek* ſignifying an *Animal*, but the *Latins* call it *Signifer*, as bearing the *Signs*; each of which is a 12th Part of the *Ecliptic* and contains 30 Degrees.

The Names and Characters of the *Signs* are theſe following;

Aries,	*Taurus*,	*Gemini*,	*Cancer*,	*Leo*,	*Virgo*,
♈	♉	♊	♋	♌	♍
Libra,	*Scorpio*,	*Sagittarius*,	*Capricornus*,	*Aquarius*,	*Piſces*.
♎	♏	♐	♑	♒	♓

The *Zodiac* and *Ecliptic* are by many Authors (c) conſider'd as the ſame Thing, but it is better to diſtinguiſh them.

Uſe of the Ecliptic.]

Geographers make uſe only of the *Ecliptic*, whoſe Uſes are various; 1ſt. Each Degree of the *Ecliptic* marks nearly the Courſe of the Sun every Day, which never removes from this *Line* like the other Planets; we ſay nearly, becauſe the Sun in 365 Days, 5 Hours, runs thro' but 360 Degrees of the *Ecliptic*, [that is at the rate of 58 Minutes 8 Seconds daily]. The 12 Parts into which this Line is divided, ſhew the Signs and Months of the Years; the 30 Degrees in each Sign, the 30 Days which the Sun takes in paſſing thro' it; and the 360 Degrees give us the Annual Courſe of the Sun, which is 365 Days and about 6 Hours, theſe odd Hours every 4 Years make a Day, and this Day is added to the laſt Year, which therefore conſiſts of 366 Days, and is call'd *Biſſextile* or *Leap Year*.

2d. Every 12th Degree of the *Ecliptic* marks the Courſe of the Moon every Day, ſo that She paſſes thro' the whole *Ecliptic*

(a) Stanley Lives Philoſ. p. 10. (b) Ibid. p. 9. (c) Pemble Brief Introd. to Geogr. p. 29. Sanſon Introd. a la Geogr. p. 114. (d) Ibid. p. 114.

cliptic in about 30 Days or ſomewhat leſs than a Month, and 12 of theſe Months make nearly the Solar Year, that is to ſay, the Moon paſſes thro' the *Ecliptic* a dozen Times while the Sun is revolving it once.

3. The *Ecliptic* exhibits the Eclipſes of the Sun and Moon, becauſe thoſe Planets paſſing thro' that Line, but in different Manners, are with reſpect to us ſometimes in Conjunction, and ſometimes in Oppoſition.

The Eclipſe of the Sun happens when the Moon is in Conjunction with it, or between the Sun and the Earth. The Solar Eclipſe is not Univerſal, being viſible only to Part of the *Horizon*, while the whole Body of the Sun appears to all the reſt.

The Eclipſe of the Moon falls out, when it is in Oppoſition with the Sun, or the Earth interpoſes directly between them; the Lunar Eclipſe is Univerſal, being viſible to the whole *Horizon*.

4. The *Ecliptic* being divided by the *Equator* into 2 equal Parts, that Part which advances towards the *Arctic* Pole, ſhews all the long Days of the *Northern Hemiſphere*, and the ſhort Days of the *Southern Hemiſphere*; the other Part on the contrary diſtinguiſhes the ſhort Days of the *Northern*, and long Days of the *Southern Hemiſphere*.

5. The *Ecliptic*, divided into 4 Parts by the *Colures*, diſtinguiſhes the 4 Seaſons of the Year, apportioning 3 Signs to each; the *Northern Hemiſphere* has for Spring, *Aries*, *Taurus* and *Gemini*; for Summer, *Cancer*, *Leo* and *Virgo*; for Autumn, *Libra*, *Scorpio* and *Sagittarius*; and for Winter, *Capricorn*, *Aquarius* and *Piſces*. On the contrary, theſe 3 laſt Signs make the Summer of the *Southern Hemiſphere*; *Libra*, *Scorpio* and *Sagittarius*, its Autumn; *Cancer*, *Leo* and *Virgo*, its Winter; and *Aries*, *Taurus* and *Gemini*, rule its Spring: So that when it is Spring in one *Hemiſphere*, it is Autumn in the Other; and One has Summer, when the Other has Winter (a).

CHAP.

(a) Sanſon ubi ſup. p. 115, 116.

CHAP. VII.

Of the Horizon.

THE *Horizon* ſignifies *Bounder*, as coming from the *Greek* Ὁρίζειν, that is to *bound* or *terminate*.

It is alſo called the *Finitor*, for the ſame Reaſon, and by the Ancients *Oceanus* (a).

The *Horizon* is a Circle drawn round any given Place on the Surface of the Earth.

There are 2 Sorts of *Horizons*, the *Senſible* and *Rational*.

Senſible Horizon.] The *Senſible* or *Viſible* is ſo call'd, becauſe it ſeems to divide the Earth from the Heaven, and the viſible Part of each from the inviſible; or bounds the Sight of the Beholder when looking round him in a wide Plain, or at Sea.

It is alſo term'd the *Apparent* and the *Phyſical* or *Natural Horizon*, for the ſame Reaſon.

Rational.] The *Rational* or *Intelligible Horizon* is ſo call'd, becauſe to be comprehended purely by our Reaſon. It is alſo called the *Real* or *True Horizon*, as correſponding to the *Aſtronomical* or that of the Heavens. Likewiſe Simply and Abſolutely the *Horizon*.

Both theſe *Horizons* have the ſame *Poles*, which are ſituated on the Surface of the Earth under the *Zenith* and *Nadir* Points; hence one Pole is the Place itſelf, and the *Antipodes* the other.

They differ in ſeveral Reſpects, the *Rational* is a great Circle dividing the Earth into 2 equal Parts, call'd the *Upper* and *Lower Hemiſpheres*. The *Senſible* is a leſſer Circle, dividing the Earth into 2 unequal Parts, or the viſible Part of the Earth from the inviſible.

The Center of the *Rational Horizon* is the Center of the Earth; that of the *Senſible Horizon* is in the Pole on the Surface of the Earth, or juſt below it.

The *Rational Horizon* correſponds to the *Horizon* of the Heavens, or the Plane of One is perpendicular to that of the Other. The *Senſible Horizon* is parallel to the *Rational*, and diſtant from it by the whole Semidiameter of the Earth.

(a) Vid. Briet. Paral. Part 1. L. 2. c. 2. p. 17.

The Semidiameter of the *Rational Horizon* is equal to the Semidiameter of the Earth; that of the *Senſible Horizon* is not above 3 or 4 Miles.

The *Senſible* and *Rational Horizon* are therefore very diſtinct in themſelves, yet they are the ſame in reſpect of the Heavens; for, ſuppoſing them to be produced by parallel Lines to the fixt Stars, they will appear to coincide, ſince the Earth compared to the Sphere in which the fixt Stars appear, is but a Point; and therefore the 2 Circles which are but a Point diſtant from each other, may be well conſider'd as coinciding into one (a). This Inference is confirm'd by Experience, ſince the Stars which appear to Riſe and Set on the Terreſtrial *Senſible Horizon*, are really at the ſame Time in the Celeſtial *Horizon*: ſix Signs of the *Zodiac* or Half the Heavens being viſible in a clear Night. Hence it may be ſaid, that we ſee the *Rational Horizon*, which in this Caſe ſeems to bound the View, or divide the Heavens from the Earth, as apparently as the *Viſible Horizon* in the Day. And perhaps, there needs no other Diſtinction, with regard either to the Terreſtrial or Celeſtial *Horizon*, than that of *Viſible*; only the *Viſible Horizon* which appears in the Day, is leſs than that which appears at Night. In this ſenſe, *Keil* might very truly call the *viſible Horizon* a great Circle (b).

The *Geographical Rational Horizon* is confounded with the *Aſtronomical* by the Generality of Writers, who copy from one another, or take their Accounts from Books of Aſtronomy, without conſidering the Difference between them.

The *Senſible* or *Apparent Horizon*, which is the *Horizon* employ'd in *Geography* and *Navigation*, is divided by the *Meridian* into *Eaſtern* and *Weſtern*.

The *Eaſtern* or *Ortive Horizon*, is that Part of the *Horizon* wherein the Heavenly Bodies Riſe. The *Weſtern* or *Occidental Horizon*, is that wherein the Stars ſet. It is ſuppoſed alſo, to be divided into 4 Quadrants by the 4 Cardinal Points.

The *Eaſt* is that Point of the *Horizon* where the Heavenly Bodies appear to Riſe when they are in the *Equinoctial*; and the *Weſt* is that Point of the *Horizon* which is directly oppoſite to the *Eaſt*, or where they appear to Set on the ſame Day: The *South* is 90 Degrees diſtant from the *Eaſt* and *Weſt*, and is in that Part of the *Horizon* where the Sun always appears to us at Noon; and the *North* is that Point of the *Horizon* which is directly oppoſite to the *South*. Each of theſe Quadrants is ſubdivided into 90 Degrees; but by Mariners the *Senſible Horizon*

(a) Keil Introd. to the true Aſtronom. Lect. 18. p. 213. (b) Ibid.

is commonly divided into 32 equal Parts, which they call the Points of the Compaſs, each of theſe Points is again ſubdivided into Halfs and Quarters (a).

The *Senſible Horizon* differs according as the Eye is ſituated higher or lower above the Surface of the Earth; thus, a Man looking down from a high Steeple or Tower, will have a more extended *Horizon*, than one who takes his Proſpect ſtanding on the Ground; and he who ſtands in the midſt of an even Plain, than another placed in a Valley ſurrounded with Mountains or Hills. In this ſenſe we ſay, a *Spacious Horizon*, a *Narrow Scanty Horizon*; the firſt of theſe two Sorts is call'd *Horizon Declivis*, the Latter, *Horizon Acclivis*.

Authors vary about the Dimenſions of the *Senſible Horizon*; *Macrobius* makes the Diameter 360 Stadia, or 45 *Roman* Miles: *Proclus* the Semidiameter, 1000 Stadia or 125 Miles; *Barbarus* 500 Stadia or 62 ½ Miles; *Bodin* 14 Miles; *Alhazen* ſays, that looking round on an equal Plain one cannot ſee above 23 Miles every way; the *Dutch* Mariners ſay, the Top-ſails of a Ship may be deſcried 6 *German* Miles off at Sea; ſo that following them, the whole Diameter of the *Viſible Horizon* will be 12 *Dutch*, or 36 Geometrical Miles, and the Circumference about 108 Miles (b).

To find the Extent of the *Horizon* or how far a Man's Proſpect reaches, by means of the Height of the Eye at 6 Foot, is a common Caſe of Right-Angled Plain Triangles, where 2 Sides and an oppoſite Angle are given; the Reſult is 5296 Yards or 3 Miles: which at leaſt would be the Diſtance on a perfect Globe, did the viſual Rays come to the Eye uninterrupted and in a ſtrait Line; but by means of the Refractions of the Atmoſphere diſtant Objects on the *Horizon* appear higher than they really are, and may be ſeen at a greater Diſtance, eſpecially on the Sea, which is a Matter of great Uſe, eſpecially to diſcover the Land, Rocks, and Shipping.

Pere *Laval*, late Profeſſor of *Hydrography* at *Marſeilles*, found that the *Horizon* of his Obſervatory to the Seaward fluctuated between 15 Minutes and 13 ½, never more nor leſs. Whence *Caſſini* deduces, that the Extent or Diameter of the *Horizon* is 7 *French* Leagues of 3 Miles each, and that the Obſervatory is 175 Foot (c).

Tho' there are as many *Horizons* as *Zeniths*, that is, as there are different Places on the Earth; ſo that the *Horizon* changes as often as one changes Place; yet there are but 3 Sorts of *Horizons*; *Right*, *Oblique* and *Parallel*.

(a) Harris Treatiſe of Navigat. Chap. 1. p. 41. (b) Vid. Alſted, Encycl. Tom. 1. p. 397. (c) Chambers Cycloped, Art. Horizon. p. 22

1. The *Horizon* is *Right*, when it hath its *Zenith* in the *Equator*, paſſes thro' the 4 Cardinal Points, and cuts the *Equator* at Right Angles; in this Poſition the *Meridian* is the *Horizon*.

2. The *Horizon* is *Oblique*, whoſe *Zenith* lies between the *Equator* and one of the *Poles* of the Earth, and which cuts the *Equator* at Oblique Angles.

3. The *Horizon* is *Parallel*, which hath one of the *Poles* for *Zenith*, and the *Equator* for the Horizontal Circle.

Uſe.] 1. The *Horizon* ſhews the Points and Hour of the Riſing and Setting of the Sun: it alſo determines the Length of the Artificial Day, which is the Time that the Sun is paſſing over the *Horizon* of any Place; and the Length of the Artificial Night, which is the Time that the Sun is hid below the *Horizon*.

Thoſe who have a *Right Horizon*, or that live along the *Equator*, enjoy a perpetual *Equinox*; becauſe the Sun being every Day 12 Hours above, and 12 Hours below their *Horizon*, the Artificial Day is always equal to the Night.

Thoſe to whom the *Horizon* is *Parallel*, or who live at the *Poles*, have a Day 6 Months long, and a Night 6 Months long; the Sun being 6 Months above and 6 Months below their *Horizon*.

To thoſe who have an *Oblique Horizon*, or live between the *Equator* and either *Pole*, the *Equinoxes* happen but twice in the Year; all the other Days and Nights being unequal, in Proportion to their Diſtance from the *Equator*, and the Elevation of the *Pole*.

Between the *Equator* and the *Polar Circles* the Days increaſe from 12 Hours to 24; becauſe thoſe who live at thoſe Circles, have the Sun above their *Horizon* for 24 Hours together.

Between the *Polar Circles* and the *Poles*, the Days increaſe in Proportion as the Sun continues above the *Horizon* of the Inhabitants; the Day becomes with ſome a Week long; with others a Month, 2, 3, 4, 5, and at length 6 Months long, under the *Poles*. See *Climates*.

2. The *Horizon* ſerves to find the *Latitude*, by ſhewing the *Altitude* of the *Pole*, or how much the *Pole* is elevated above it, which is always equal to the Diſtance of the *Equator* from the *Zenith*.

3. It is of great Uſe in Navigation, to diſcover the Variation of the Needle and Points of the Winds; the Diviſion of the Compaſs being nothing elſe but the Diviſion of the *Horizon*.

BOOK II.

Containing the Aſtronomical *Diviſions of the Globe of the Earth by* Lines *and* Circles *of the* Sphere.

CHAP. I.

The Diviſions of the Earth, into Regions or Quarters.

Diviſion of the Globe.] THE Lines and Circles which we have given an Account of, furniſh the *Geographer* with ſeveral different Methods of dividing the Surface of the Terreſtrial Globe: And this is what we call the *Aſtronomical Diviſion of the Earth*, reſulting from the Application of the Circles of the Sphere.

Uſe.] The Uſe of this Diviſion is more fully to illuſtrate the Contrivance of the *Artificial Sphere*, by conſidering the Lines and Circles in different Combinations, which we conſider'd before ſeparately, each by itſelf.

Authors do not agree as to this Sort of Diviſion of the Earth. *Sanſon* divides it in 7 different Manners; *viz.* into 1. Regions or Quarters. 2. Hemiſpheres. 3. Zones. 4. By Shadows. 5. By Poſitions. 6. By Climates and Parallels. 7. According to Longitude and Latitude. 8. By Meaſures (a).

(a) Sanſon Introd. a la Geogr. p. 126.

Chamereau makes this Diviſion five-fold: 1. Into *Zones*; 2. By Diſtinction of Inhabitants, according to the Diverſity of Seaſons, the ſame with *Sanſon's* Poſitions; 3. By Diſtinction of Inhabitants according to Shadows; 4. By the different Length of Days or *Climates*; 5. Into Regions or Quarters (a).

Ozanam divides the Earth by Lines and Circles five Ways, thus; 1. By *Zones*; 2. By Shadows; 3. By Poſitions; 4. By Climates; 5. By the Length and Breadth, that is, according to *Longitude* and *Latitude* (b). Several of theſe are not properly Diviſions of the Earth, for Shadows, Poſitions, Meaſures, *Longitude* and *Latitude*, or Length and Breadth, are not Lines and Circles of the Sphere, but rather certain *Aſtronomical* Diſtinctions, or Affections, explain'd by thoſe Lines and Circles; beſides they all omit the Diviſion by *Meridians* and *Parallels*, which is the moſt Eſſential, and indeed the Baſis of all the reſt.

There appear to us, therefore, to be only five Kinds of *Aſtronomical* Diviſions of the Earth; *viz.* 1. By Regions or Quarters; 2. By Rhumb Lines; 3. By Hemiſpheres; 4. By Zones; 5. By Climates; and 6. By Meridians and Parallels. Whereof we ſhall treat in their Order, and firſt of the Diviſion by Regions or Quarters.

By Quarters.

With Reſpect to the 4 Cardinal Points, the Surface of each Horizontal Hemiſphere is divided into 4 great Quarters or Regions; namely, the *Northern*, *Southern*, *Eaſtern* and *Weſtern*; regard being had to the *Zenith*, which is the Center of this Diviſion.

This Diviſion is one of the moſt uſeful in *Geography*, as it ſerves to compare the Situation of Countries in reſpect of each other; ſo that the ſame Kingdom conſider'd with relation to the neighbouring Parts is *Northern* in reſpect of one, at the ſame time that it's *Southern* in reſpect of another; its Situation alſo is *Weſterly* of that which lies to the *Eaſt* of it, and *Eaſterly* to the Country lying to the *Weſt*. For Inſtance, *England* is *Northerly* in reſpect of *France*, *Southerly* in reſpect of *Scotland*, *Eaſterly* in reſpect of *Ireland*, and *Weſterly* in reſpect of the *Netherlands*.

The *Europeans* conſidering the Situation of the Continents in reſpect of themſelves, call their own, which is the Ancient, the *Eaſtern* Continent; the New Continent, or *America*, the *Weſtern*; the *Magellanic* or *Arctic* Continent, the *Southern*; and have given the Name of the *Northern* to the Lands lying towards that Quarter: Nevertheleſs the Old Continent and the *American* lie reciprocally *Eaſt* and *Weſt* of each other, as the *Arctic* and *Antarctic* Continents lie reciprocally *North* and *South*.

(a) Chamereau Geogr. Pratiq. p. 22. (b) Ozanam Dict. Math. p. 338.

If therefore we conſider the Continents as ſituated with regard to *Chili* in *South America*, *America* will be the *Eaſtern* Continent, the *Arctic* Continent will be the *Southern*, the Old Continent will be the *Weſtern*, and the *Magellanic* the *Northern*.

Hiſtory.] This is the moſt ancient as well as moſt neceſſary in the Opinion of Some (a), of all *Aſtronomical* Diviſions; for before People had any Notion of the Spherical Figure of the Earth, or thought of *Zones*, *Climates*, or other ſubtile Contrivances, they were neceſſitated to determine the Situation of Places in reſpect of one another, by ſome Method; and that of the Quarters of the World, naturally ſuggeſted itſelf, by means of the Riſing and Setting of the Sun (b).

Strabo admires *Homer*, in that he knew how to diſtinguiſh the *Ethiopians* who dwelt towards the Riſing of the Sun from thoſe who dwelt towards the Place where he Set, and was acquainted with the Places where the Riſing and Setting meet, which are the Points of the *Meridian* in the *Horizon* (c): But *Homer* without doubt, had learned this Diſtinction of the Quarters of the World from thoſe who lived before his Time, to whom it was not unknown, as appears from Scripture, where *Cain* is ſaid to have dwelt in the Country to the *Eaſt* of *Eden* (d); and *Abraham* is obſerved to have beheld the Country from the Place where the Promiſe was given, to the *North*, *South*, *Eaſt*, and *Weſt*.

The Encampment of the 12 Tribes in the Wilderneſs, and the Place where the Altars were erected, were alſo regulated by this Diſtinction of Regions, which frequently occurs in the Deſcription of the *Holy-Land* contain'd in the *Bible*, the moſt ancient Piece of *Geography* now remaining.

Moſes has mark'd out the Situation of that Country, and mentions the Cities, Mountains, Seas and Rivers, which were to bound it on the *Eaſt*, *Weſt*, *South* and *North* Sides: The ſame Diſtinctions are obſerved in the Deſcription of the Lands which *Joſhua* divided by Lot among the nine Tribes and a half; alſo in the new Diviſion among the Tribes after the *Babyloniſh* Captivity; and Laſtly, in the Building of the Temple of *Jeruſalem*, as well as that of the firſt *Chriſtian* Temples in Imitation thereof, whenever it could conveniently be effected; not to mention the famous Houſe of *Loretta*, whoſe Situation Mr. *Caſſini* found to be conformable to the Quarters of the World (e).

Such a Situation could not have been given this laſt Place, merely, by Accident, any more than that of the greateſt of the *Egyptian*

(a) See Sanſon Introd. a la Geogr. p. 126. (b) See Bearing. (c) Strabo Geogr. L. 1. p. (d) Geneſis ch. iv. v. 16. (e) See Caſſini Grand. de la Terre, ap. Suite Mem. Acad. Scient. Ann. 1718. Part I. ch. 2. p. 22. & ſeqq.

Egyptian Pyramids, whoſe four Fronts look directly towards the four Quarters of the World, as hath been obſerved by *Greaves*, *Thevenot*, *Chazelles*, and other Travellers.

There is another Way of diſtinguiſhing the Quarters, which being more Simple is probably more Ancient than the former: The *Hebrews*, and generally all other Nations, expreſſed the *Eaſt*, *Weſt*, *North* and *South*, by the Words which ſignify *before*, *behind*, *Left* and *Right*, according to the Situation of a Man with his Face turn'd towards the *Eaſt*; hence the Queen of *Sheba* is in the *Hebrew* call'd Queen of *Yemin*, which ſignifies the *Right-hand*, to denote the *South* as the *Engliſh* Verſion renders it; and that Country is for the ſame Reaſon, by the *Arabs* themſelves, nam'd *Yaman*, which ſignifies properly the *Right-hand*, or any Region lying that Way; as *Syria* is call'd *Sham*, or the Country towards the *Left-hand*, to denote its being ſituated to the *Northward* of that Part of *Arabia* where *Meccah* is.

This general Cuſtom however has been ſet aſide by the Practice of People of particular Profeſſions. Thus the Poets call the *South* the Left Hand, and the *North* the Right, becauſe we are told in compoſing their Verſes they turned their Faces towards the *Weſt*; for which Reaſon they choſe the Evenings for thoſe Purpoſes, imagining, that the cooling Breezes of the *Zephyrs*, in Conjunction with a good Supper, contributed much to inſpire their Genius. Hence it is, that *Lucan* ſays, that in the *Northern Temperate Zone*, the Shadows of Trees at Noon never fall to the Left Hand, as in the *Torrid Zone*, to ſignify that they never fall to the *South* (a).

> *Ignotum vobis, Arabes, veniſtis in Orbem,*
> *Umbras mirati nemorum non ire Siniſtras.*

The *Geographers* look towards the *North*, the *Pole* being their chief Object, in regard the *Latitudes* of Places are determin'd by obſerving the *Altitude* thereof; thus with them the *Eaſt* is the Right Hand, and the *Weſt* the Left; on the contrary, the *Aſtronomers* turn their Eyes *Southward*, becauſe their Buſineſs is to obſerve the *Meridian Altitude* of the Sun and Stars, and the Motion of the *Zodiac* which lies on that Side; ſo that with them the *Weſt* is the Right Hand, and the *Eaſt* the Left.

Several Nations in their ſolemn Acts of Worſhip, turn'd their Faces one certain Way; the *Sabæans* towards the *North* (b), whence to them the *Eaſt* was the Right Hand, and the *Weſt* the Left; the *Chriſtians* towards the *Eaſt*, probably in Commemoration of the Star which was ſeen in the *Eaſt* at the Nativity of Chriſt; ſo that to them the *South* was the Right Hand, and the *North* the Left Hand.

(a) Vallem. Elem. del Hiſt. Vol. I. p. 160. (b) Gol. Not. in Alfragan. p. 251.

The Ancient *Jews* wherever they were, when they went to pray, directed their Faces towards *Jeruſalem*, as the Ancient *Arabs*, and at preſent the *Mohammedans* in General do towards *Meccah*; becauſe, their Temples or moſt ſolemn Places of religious Worſhip were in thoſe Cities. The *Arabs* call this Point to which they turn themſelves, *al Kiblah*; hence as the *Kiblah* was ſometimes towards one Quarter of the World, ſometimes towards another, according as the ſeveral Devotees were ſituated in reſpect of their Temples; ſo the Quarters chang'd Hands, the *North* being ſometimes the Right Hand, ſometimes the Left, as were alſo in their Turns, the *Eaſt*, *Weſt* and *South*. In the Temple of *Meccah* itſelf, where the Pilgrims turn their Faces every Way towards the *Kaaba* in their *Circuitions* or *Proceſſions* round it, the *Kiblah* runs thro' all the Points of the Compaſs in the Space of a few Minutes.

This may ſerve for the Underſtanding of Authors, wherein any mention is made of the Right or Left Part of the World; which various Situations of Perſons of different Profeſſions, is emphatically expreſs'd in the following Verſes;

Ad Boream Terræ, ſed Cæli menſor ad Auſtrum:
Præco Dei Exortum videt, Occaſumq; Poeta.

That is, *Geographers* look towards the *North*, *Aſtronomers* towards the *South*, *Prieſts* turn them to the *Eaſt*, and *Poets* to the *Weſt* (a).

Differ.] Theſe Quarters or Regions of the World differ, according as they are apply'd to the Earth or Heavens; or, are not the ſame with *Geographers* as *Aſtronomers*.

The *North* and *South* Regions of the Heavens and the Earth are the ſame, but in all other reſpects, the Regions of the Earth differ from thoſe of the Heavens, according to the *Latitude* of the Place of Obſervation; except the Place be on the *Equator*, in which Caſe they all coincide.

For Inſtance, ſuppoſe the Place is in the Latitude of 50 Degrees, the *North* and *South* Quarters of the Earth correſpond to thoſe in the Heavens; becauſe the Cardinal Points of *North* and *South* lie in the Terreſtrial as well as the Celeſtial *Meridian*; but the *Eaſt* and *Weſt* Quarters do not correſpond or are not perpendicular one to the other, becauſe the Cardinal Points of *Eaſt* and *Weſt* in the Heavens are in the *Equinoctial*, but thoſe on the Earth muſt be looked for in the *Parallel* of 50 Degrees diſtant from the *Equator*; the like is to be underſtood of all the intermediate Points.

(a) Pemble Brief Introd. in Geogr. c. 5. p. 35. Vallemont. ubi ſupr. p. 260, 261.

The Reaſon is, that in the Heavens you are directed to the Quarters, by the *Verticals* or *Azimuths*, which are the *Aſtronomical* Circles of Poſition, paſſing from the *Zenith* of the Place to every Point of the Celeſtial *Horizon*.

But in finding the Quarters on the Earth you are directed by the *Rhumb Lines*, which are the *Geographical Lines of Poſition*, paſſing from the Place directly under the *Zenith*, in a different Direction from the *Verticals*; hence ariſes a Diviſion of the Earth by *Lines of Poſition*.

CHAP. II.

The Diviſion of the Earth by Lines of Poſition *or* Rhumb Lines.

Etymology.] WE call theſe *Lines of Poſition* or *Bearing*, becauſe they exhibit Places according to their Bearing, which is the Direction of this Line. The *Greeks* call'd them *Diaphragms*, or *incloſing Lines*.

In *Navigation* the *Line of Poſition* is call'd a *Rhumb* or *Rumb*, which Word may poſſibly be derived from the *Greek* ῥυμὸς, ſignifying the *Shaft of a Chariot*, which keeps it going direct and ſteady; for the *Rhumb* ſhews alſo the direct Road which is to be taken; Some of the *French* call it *Rym*, others *Lys de Vent*; the *Spaniards Rumo*, agreeably to the *Greek*, excepting the Accent (a). It has the Name likewiſe of *Loxodromy*, from λοξὸς *oblique* and δρομος *Courſe*, becauſe it cuts the Circles of the Earth obliquely; it is alſo call'd a *Loxodromic Curve*, and a *Heliſpherical Line*, becauſe it winds round the Earth *heliacally*, that is like a *Helix* or *Spiral Line*; but theſe two laſt Denominations belong properly only to thoſe *Rhumbs* which are not Circles; each of theſe *Lines of Poſition* or *Rhumbs* has a peculiar Name to diſtinguiſh it from the reſt.

M A

(a) Nicot ap. Menage Dict. Etymol. Art. Rum.

Definition.] A Right Line drawn from the Center of the Compaſs, or paſſing from the *Zenith* [or Place under it] to any Point of the apparent *Horizon*, is call'd a *Rhumb* or *Rhumb Line* (a); but this is not to be underſtood in a ſtrict Senſe, for as the Points of the apparent Terreſtrial *Horizon* coincide with thoſe of the Celeſtial, conſequently Lines drawn to them from the Place of Obſervation would be *Verticals* and not *Rhumb Lines*.

Or it is a Line which a Ship (keeping in the ſame Point) deſcribes throughout its Courſe. *Aubin* defines it a Line repreſenting one of the 32 Winds (b); or more properly (as we conceive) the **Direction** of the **Magnetical Needle**, on which it is grounded.

And hence the Mariner diſtinguiſhes the *Rhumbs* by the ſame Names as the Points and Winds, reckoning 32, which are repreſented by the 32 Lines in the Roſe or Card of the Compaſs; ſo that *Rhumbs* are divided and ſubdivided like Points; thus the whole *Rhumb* anſwers to the Cardinal Point of *Eaſt*, *Weſt*, *North* or *South*; whence alſo, it is ſometimes call'd the *Cardinal Rhumb*: The *half Rhumb* to a *collateral Point*, as *North-Eaſt*, &c. or makes an Angle of 45 Degrees with the former; the Quarter, or *North-North-Eaſt Rhumb* an Angle of 22° 30 Min. therewith, and the Half quarter, or *North-by-Eaſt Rhumb* makes an Angle of 11° 15 Minutes. (c).

Division.] Hence *Rhumbs* may be diſtinguiſh'd into two Sorts, *Cardinal* and *Collateral*; of the firſt Sort are all *North* and *South*, and *Eaſt* and *Weſt* Lines. But they chiefly merit the Name of *Cardinal* when the *Eaſt* and *Weſt Rhumb* Line is the *Equator*: Becauſe then they are great Circles correſponding to *Verticals*, and conſequently cutting the Earth thro' the 4 *Cardinal Points*; for in all other Caſes, the *Eaſt* and *Weſt Rhumbs* do not paſs thro' the *Cardinal Points* of *Eaſt* and *Weſt*.

Collateral Rhumbs, are thoſe which paſs between the *Cardinal Rhumbs*, and coincide with the *Collateral* or intermediate Points of the Compaſs or Winds; cutting all the *Meridians* at the ſame Angles with the Points from which they are denominated.

Hence all *Rhumbs*, except *Cardinals*, muſt be *Curves* or *Heliſpherical Lines* forming a kind of *Spirals* (d); which like the *Logarithmic Spiral*, make an Infinity of Circumvolutions, without ever arriving at a certain Point to which it tends and approaches every Step, which *Aſymptotic* Point of the *Rhumb Line* is the *Pole*.

(a) Harris's Treatiſe of Navigat. (b) Aubin Dict. de la Marine, Art. Rhumb. (c) Vid. Eund. Ibid. & Chambers Cycloped. Art. Rhumb. (d) Harris ubi ſupr. Ch. I. p. 46.

A *Rhumb* properly contains 2 Winds, in regard the ſame *Rhumb* may be conſidered both as a *North* and *South Rhumb*, or a *North-Eaſt* and *South-Weſt Rhumb*, becauſe it ſerves for any 2 oppoſite Points of the Compaſs between which it is drawn: hence the Number of *Rhumbs* is but half the Number of Winds, *viz.* 16 (a).

Hiſtory.] The Uſe of *Lines of Poſition* is very Ancient, as appears in that *Scylax Caryandenſis* (who wrote in the Time of *Darius Hyſtaſpes*, about 485 (b) Years before Chriſt) at the End of his *Periplus*, mentions the *Diaphragms* (as the *Greeks* call'd them) moſt convenient for paſſing between *Aſia* and *Europe* (c); theſe *Diaphragms* were drawn in the Maps of his Time, and perhaps were the only Lines then uſed in Maps: But they cannot be named *Rhumb Lines*, which were unknown to the Ancients, as having their Original only ſince the Diſcovery of the directive Property of the Loadſtone.

Formal Cauſe.] The Conſtruction of the *Rhumb Line* is grounded on the Direction of the Magnetical Needle, which may be illuſtrated in the following Manner; a Veſſel beginning its Courſe, the Wind, wherewith it is driven, blowing from a certain Point of the Compaſs, makes the ſame Angle with the *Meridian* of the Place which ſuch Point makes; and as it is ſuppoſed the Veſſel runs exactly in the Direction of the Wind, it makes the ſame Angle with the *Meridian* which the Wind makes.

Suppoſing then the Wind to continue blowing from the ſame Point; as each Step or inſtant of the Progreſs may be eſteem'd the Beginning, the Veſſel always makes the ſame Angle with the *Meridian* of the Place where it is each Moment, (or in each Point of its Courſe) which the Wind makes.

Now a Wind, for Inſtance, that is *North-Eaſt*, and which of Conſequence makes an Angle of 45 Degrees with the *Meridian*, is equally *North-Eaſt* where-ever it blows, and makes the ſame Angle of 45 Degrees with all the *Meridians* it meets. A Veſſel therefore driven by the ſame Wind, always makes the ſame Angle with all the *Meridians* it meets withal on the Surface of the Earth.

(a) See Carpent. Geogr. Part I. p. 151. Dict. de Trevoux, Art. Rhumb. (b) Vid. Fabric. Biblioth. Græc. Vol. III. p. 31, 33. (c) Vid. Scylac. Peripl. p. 55. & Dodwel Diſſert. de eod. p. 61. ap. Hudſon Geogr. Vet. Græc. Vol. I.

If a Veſſel ſail *North* and *South*, it ſails on the *Meridian*; if it run *Eaſt* and *Weſt* it cuts all the *Meridians* at Right Angles, and conſequently ſails either by the *Equator* or a *Parallel*. In the firſt Caſe, it deſcribes a great Circle; in the Second, never but when its Courſe is along the *Equator*. If its Courſe be between the *North* and *Eaſt*, it does not then deſcribe a Circle, but a *Loxodromic Curve* or *Rhumb Line*; the eſſential Property of which is, that it cuts all the *Meridians* under the ſame Angle, which Angle is had by the Compaſs (a).

FIG. 2. If P A, P F, P G, &c, be ſuppoſed *Meridians*, A I the *Equator*, and A E another great Circle of the Sphere, A O will repreſent a *Rhumb Line*, the Angles whereof with the ſeveral *Meridians* being leſs than thoſe of a great Circle, it follows that the *Rhumb* is not a great Circle of the Sphere. If a Ship therefore at A, be at firſt directed towards E, and conſtantly perſiſt in the ſame *Rhumb*, it will never arrive at the Place E, but at the Place O, which is farther from the *Equator*.

Hence, as on the Surface of a Sphere, the ſhorteſt Way between A and O is an Arch of a great Circle, and conſequently the *Rhumb Line* is not the ſhorteſt Way or leaſt Diſtance from one Place to another (b); but when the 2 Places are either under the *Equator* or the ſame *Meridian*, the Length of the *Rhumb* intercepted between them is call'd their Diſtance upon that *Rhumb* (c).

Synonym.] The *Rhumb Lines* repreſent the *Vertical Azimuths* or *Circles of Poſition*, or are on the Earth what thoſe other Circles are in the Heavens; tho' they do not divide it in the ſame Manner, *Differ.*] but differ from them in ſeveral reſpects. (1) The *Rhumbs* cut the *Meridians* at equal Angles, the *Verticals* at unequal Angles. (2) The *Verticals* are Circles, whereas all the *Rhumbs* except the *North* and *South*, and the *Eaſt* and *Weſt Rhumbs* are *Spiral Lines*. (3) All *Verticals* are great Circles, but among the *Rhumbs* there can never be more than two; and that only when the *Eaſt* and *Weſt Rhumb* coincides with the *Equator*, in all other Caſes there will be but one.

Notwithſtanding, theſe 2 Sorts of Lines are ſo remarkably different, yet a *Rhumb* is defin'd by ſome to be a *Vertical Circle* of any given Place, or the Interſection of a Part of ſuch a Circle with the *Horizon* (d); and *Keil* expreſly ſays, the *Horizon*

(a) Hiſt. Acad. Scienc. Ann. 1702. Art. Hydrog. p. 113. Chambers Cycloped. Art. Rhumb. (b) Chambers ubi ſupr. (c) Harris Treatiſe of Navigat. p. 46. (d) See Dict. de Trevoux, Art. Rhumb.

rizon is divided by the *Verticals* into 32 Parts, which are call'd *Rhumbs* or *Points of the Compaſs* (a).

But this is an Error which has been long ſince refuted by *Huet*, (upon much the ſame Reaſons with thoſe already alledged, to ſhew the Difference between *Rhumbs* and *Verticals*) in Anſwer to *Nonnius*, who imagined the *Rhumbs* to be Portions of Great Circles (b).

Indeed, in ſo narrow a Circuit as that of the Compaſs-Card, or ſuppoſing the *Horizon* indefinitely ſmall, the Difference between the *Rhumbs* and *Verticals* is not ſenſible: But as in Reality they do differ even from the very ſetting out, they cannot in any ſort be accounted the ſame. For tho' the *Vertical* of *Eaſt* and *Weſt* makes a Right Angle with the *Meridian* of the Place of Obſervation; yet it cuts the next *Meridian*, removed from it by ever ſo ſmall a Diſtance, at Oblique Angles, and conſequently ceaſes to be a *Rhumb*: So that the *Rhumbs* correſpond to the *Vertical* Circles, if at all, only for a Moment, and immediately deviate from them, ſhaping their Courſe in a contrary Direction.

The Reaſon is, that the Magnetical Needle upon which the Conſtruction of the *Rhumb Line* is grounded, does not always keep in the Direction of the *Vertical Circle*, which is ſtill the ſame; but changes its Direction from *Eaſt* to *Weſt*, at every *New Meridian* it comes to.

However, thus far cannot be deny'd, that the *Rhumb Line* is an Imitation of the *Line of Poſition* or *Vertical Circle*; and would be the ſame with it all along, if it was not diverted or turned aſide by the Direction of the Magnetical Needle. In like Manner, a Ship might ſteer its Courſe according to a *Vertical Circle*, in caſe there was any Mark in the Heavens or on the Earth, to guide the Mariner in the Direction thereof; but for want of ſuch, She is obliged to follow the Courſe of the *Rhumb Line* pointed out by the Compaſs. And hence it is, that *Vertical Circles*, which would be far more commodious than *Rhumb Lines*, are of no Uſe in *Geography*.

It is on Account of the Relation, tho' diſtant, which the *Rhumb* has to the *Vertical Circle*, and its Dependance on the Knowledge of the *Meridian Line*, that we conſider the *Rhumb Lines*, as an *Aſtronomical* Diviſion of the Earth, rather than a *Geometrical* (c).

Uſe.] *Lines of Poſition*, or *Rhumbs*, ſerve for determining the Situation of Places much more preciſely than the Diſtinction by Quarters of the World, which are divided by them into Parts; for Places being reduced to their reſpective

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(a) Keil Introd. to the true Aſtron. Lect. 18. p. 214. (b) Vid. Carpent. Geogr. Part I. p. 151. (c) See Bearing and Meridian Line.

Lines of Bearing, you have the true Situation of thoſe Places in reſpect of one another.

The Knowledge of the *Rhumb* therefore is the main Baſis of *Navigation*.

We have been the more particular in our Account of the *Rhumb Line*, becauſe of its Importance, and the imperfect or erroneous Deſcription which is given of it by the Generality of Authors.

Dr. *Hook* intended in his Lectures to have ſhewn wherein it differ'd from all othes, particularly from *Lines of Poſition* or *Great Azymuthal Circles* (a); and 'tis likely he might have done it, but nothing of the Kind is to be met with in his printed Works.

CHAP. III.

Of the Diviſion of the Earth into Hemiſpheres *and* Zones.

Hemiſpheres.] THE Globe of Earth is divided into two *Hemiſpheres* by each of the five Great Circles; but as the *Hemiſpheres* made by the *Ecliptic* are only of Uſe in *Aſtronomy*, ſo the *Geographers* regard none but thoſe formed by the *Equator*, the *Meridian*, and *Horizon*.

I. The *Equator* divides the Surface of the Earth into two *Hemiſpheres*, the *Northern* and the *Southern*.

II. Every intire *Meridian* divides the Earth into two *Hemiſpheres*, call'd the *Eaſtern* and *Weſtern*.

III. The Globe is divided by the *Horizon* into two *Hemiſpheres*, call'd the *Upper* and the *Lower*.

Of theſe different Sorts of Diviſions by *Hemiſpheres* none but the Firſt is fixt and unchangeable. The *Horizontal Hemiſpheres* change in every Place, and thoſe made by the *Meridian* do the ſame; ſeeing there may be as many different Diviſions ar there are *Meridians* (b). This is all that need be ſaid with regard to the Diviſion into *Hemiſpheres*.

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(a) Hook's Poſthum. Works, p. 518. (b) See Sanſon Introduct. a la Geogr. p. 131.

Zones.]
Definition.]

As to the Diviſion by *Zones*, the 2 *Tropics* and 2 *Polar Circles* divide the Earth into 5 Portions, ſo call'd from the *Greek* Word ζώνη, which ſignifies a Girdle; being broad Spaces like Swathes, girding the Earth about. Indeed the *Frigid Zones* reſemble Shields or Disks more than Girdles, whence ſome reckon 3 *Zones*, and 2 *Shields* (a).

They have other Names given 'em by the Ancients, as *Plagæ* by *Ovid*, *Faſciæ* by *Martian*, and *Marulæ* by *Cicero* (b). They alſo gave the Name of *Zones* to the Orbs of the Planets: Thus *Theon* ſays there are ſeven *Zones* in Heaven; 1 *Saturn*, 2 *Jupiter*, &c (c).

Diſtinction.]

The *Zones* are diſtinguiſh'd according to the Degrees of Heat or Cold to which their Situation is ſubject, occaſion'd by the Rays of the Sun falling more or leſs perpendicularly in different Parts of the Surface of the Earth. Hence the *Zones* in reſpect of their Quality are peculiar to *Geography*, yet ſtill their Original is to be look'd for in the Heavens: Not on Account of different Temperature, which hath no Place there, but of the correſponding Circles which bound them (d).

Invention.]

The Invention of the *Zones* is unjuſtly aſcribed by *Poſidonius* to *Parmenides*, *Thales* having been the Inventor (e). The ſame *Poſidonius* eſtabliſhed ſeven, and *Polybius* ſix (f); tho' the Ancients like the Moderns, generally reckon but five (g). Of theſe there is 1 *Torrid*, 2 *Temperate*, and 2 *Frigid*.

——Torrid.]

The *Torrid Zone* lies in the midſt between the 2 *Temperate*, comprizing all the Space from one *Tropic* to the other; it is divided by the *Equator* into 2 equal Parts, whence Some divide this *Zone* into *Northern* and *Southern*. *Strabo* makes the Parallel paſſing thro' the Cinnamon Country, the Beginning of the *Torrid Zone* (h). The Ancients gave it the Name of *Torrid* or *Burnt Zone*, becauſe being continually expoſed to the perpendicular Rays of the Sun, they imagin'd, that the exceſſive Heats had converted the greater Part of it to ſandy Deſarts, and render'd the reſt almoſt wholly barren and uninhabitable (i). 'Tis true, *Eratoſthenes* and *Polybius* held it to be Temperate and Habitable, and the

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(a) Alſted Encycl. Tom. I. p. 539. (b) Ibid. (c) Ibid. p. 394. Carpent. Geogr. Part I. p. 203. (d) Vid. Alſted ubi ſupr. p. 394, 539. (e) Plut. de Plac. Philoſ. citant. Stobæo ap. Stanley Lives Philoſ. p. 9. (f) Strabo L. 2. p. 169. (g) Cellarius Notit. Orbis Antiq. in Præfat. (h) Strabo Geogr. L. 2. p. 168. (i) Vid. Plin. Hiſt. Nat. Lib. 2. cap. 68.

Voyages performed round *Africa* proved it to be ſo; yet as thoſe Voyages were not much credited, moſt were of a contrary Opinion, even in the Time of *Strabo* (a); *Eratoſthenes* himſelf, according to *Heraclides* in his Allegories of *Homer*, is not firm to his Opinion, and ſpeaks of the *Torrid Zone*, as *a dry ſandy Region, continually burnt with the Rays of the Sun* (b).

But Experience informs us, that the Heats are much leſs under the *Equator* than the *Tropics*; becauſe the Sun returning as ſoon as he arrives at the Latter, continues longer about them than the *Equator*. Beſides the long Nights, great Dews, regular Rains and Breezes, which prevail almoſt throughout the *Torrid Zone*, render the Earth not only habitable, but ſo fruitful, that in many Parts they have 2 Harveſts in a Year; all Sorts of Spices and Drugs are almoſt ſolely produced there; and it furniſhes more perfect Metals, precious Stones and Pearls, than all the other *Zones* together. So that the Deſarts to be found there, are to be attributed to the natural Barrenneſs of the Soil rather than the Heat of the Sun: Eſpecially conſidering that we meet with ſuch Deſarts in the *Temperate Zones* themſelves; that in the Part of *Africa* which lies in the *Torrid Zone*, there are Countries exceeding fertile; and that all the Countries and Iſlands of *Aſia* as well as thoſe of *America*, known to us, ſituated in this *Zone*, are very luxuriant (c).

——Temperate.] The *Temperate Zones* are compriz'd between the 2 *Tropics* and *Polar Circles*: They are call'd *Temperate*, becauſe being ſituate between the *Torrid* and *Frigid Zones*, they enjoy a temperate Air; eſpecially in the Middle, where the Cold and Heat are more equally mixt.

——Frigid.] The 2 *Frigid Zones* lie between the *Polar Circles* and the *Poles*, or rather are incloſed within the *Polar Circles*, being as we ſaid like *Shields* rather than Girdles. They are called *Frigid* or *Frozen*, becauſe moſt part of the Year it is extremely cold there, and every Thing is frozen ſo long as the Sun is under the *Horizon* or but a little above it. However theſe *Zones* are not altogether uninhabitable, tho' far leſs fit for living in than the *Torrid*. Dr. *Halley* ſhews, that the *Solſticial* Day at the *Pole* is as hot as at the *Equator*, when the Sun is in the *Zenith*, in regard all the 24 Hours of that Day the Sun Beams are inclined to the *Horizon* with an Angle of 23 ½ Degrees; whereas at the *Equator*, tho' he becomes Vertical, yet he ſhines no more than 12 Hours, and is abſent 12 Hours; beſides that, for 3 Hours, 8 Minutes of that 12 Hours he is above the *Horizon* there, he is not ſo much elevated as at the *Pole* (d).

(a) Strab. Geogr. l. p. 173 & ſeqq. (b) Huetiana p. 264, ap. Martiniere.
(c) Sanſon ubi ſupr. p. 134. (d) See Dr. Halley, ap. Phil. Tranſ. N°

It has been obſerved by our Navigators who went in Search of the *North-Eaſt* Paſſage, (a Diſcovery ſo imprudently given over) that the Cold about *Nova Zemla* is occaſion'd by the Ice which comes from the *Tartarian Sea*, and not by the Nearneſs of the *Pole* (a). The 27th of *June* 1608, they found the Cold not great on the Coaſt of *Greenland* in 78 Degrees (b); and the 14th of *July*, they found it Hot beyond 80 (c); nay they met with Leaves and Graſs in *Greenland* in the ſame Latitude, at the ſame Time that they found none in *Nova Zemla* 6 Degrees more *Southerly* (d).

Zones Breadth.]

The *Zones* are of different Dimenſions, there are 3 *Great Ones*, viz. the *Torrid* and 2 *Temperate*; and 2 *Leſſer*, or the *Frigid*; the *Torrid Zone* contains about 47 Degrees of Latitude, or in Breadth 2820 Geometrical Miles. Each of the *Temperate Zones* about 43 Degrees of Latitude, or in Breadth 2580 Miles. The *Frigid Zones* have of Latitude but about 23° 30 Minutes each, or in Breadth about 810 Miles.

——*Length.*]

The Length of the *Zones*, or rather their Circumference differs alſo much, tho' they have all 360 Degrees of Longitude; for as theſe Degrees diminiſh the more they recede from the *Equator* and approach the *Poles*, ſo the Circuit of the *Zones* diminiſhes proportionably, according to the Latitudes under which they are ſituated.

The Circumference of the *Torrid Zone* at the *Equator*, where it is moſt extended, is 21,600 Geometrical, or 24,930 *Engliſh* Miles; that is, is equal to the Circumference of the Earth, and a little more than 19,800 Geometrical Miles at its Extremities under the *Tropics*.

This Circumference at the *Tropics* is the greateſt Extent of the *Temperate Zones*, which in the Middle, at 45 Degrees of Latitude, are about 15,264 Miles in Compaſs, and about 8,612 Miles at the *Polar Circles* where they end.

Theſe *Polar Circles* determine the greateſt Circumference of the *Frigid Zones*; the middle Circuit of them is not above 4,339 Miles, and their Extremes at the *Poles* is but a Point.

——*imperfectly diſcover'd.*]

None of theſe *Zones* is thoroughly diſcover'd by *Europeans*: the *Northern Temperate* and *Torrid Zones* are better known than the reſt; nothing is known to us of the *Southern Temperate Zone*, but what belongs to our Continent and *America*; ſome

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(a) See Purchas Pilgrims, Vol. III. p. 473. (b) Ibid p. 569. (c) Ibid. p. 571. (d) Ibid. p. 474.

ſome Iſlands and Sea Coaſts in the *Northern Frigid Zone* are come to our Knowledge, but we have none at all of the *Southern Frigid Zone*.

Among the 3 *Greater Zones*, the *Northern Temperate* ſeems to contain twice as much Land as the *Torrid*; and the *Torrid* much more than the *Southern Temperate Zone* (a).

CHAP. IV.

The Diviſion of the Earth by Climates.

Definition.] A Climate is commonly defined to be a Space of the Earth's Surface contained between two *Parallels*, wherein the *Solſtitial* or longeſt Day of one, exceeds that of another by half an Hour.

But we conſider it rather as a Space contained between 2 *Horary Parallels*, wherein the Length of the longeſt Day is varied by any Quantity of Time more or leſs; as a Quarter of an Hour, Half an Hour, an Hour, a Day, a Week, a Month, or Half a Year.

Etymology.] They are termed *Climates*, *quaſi* ἐγκλίματα, from Κλίνω, to *decline* or *incline*, becauſe they *decline* from the *Equator* and *incline* to either *Pole* (b).

1 *Diſtinction.*] But it muſt be obſerved, that tho' the Spaces contain'd between any *Parallels*, as thoſe of *Latitude*, may be ſaid to *decline* from the *Equator*, yet no Space can be a *Climate* but what is bounded by *Horary* or *Artificial Parallels*.

According to others, the Word ſignifies to *increaſe*, on Account of the increaſing or lengthening of the Days in different *Climates* (c).

2 *Diſtinction.*] The *Climates* may be call'd *leſſer Zones*, as agreeing with *Zones* in Form, in that they are broad Spaces girding the Earth, and included betwixt 2 *Parallels*; but they differ from them in Magnitude and Number (being in Magnitude leſs, in Number more) as well as in the Office and Uſe; for the *Zones* diſtinguiſh the

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(a) Vid. Sanſon ubi ſupr. p. 135 & ſeq.

(b) See Gordon Geogr. Gram. p. 10. Alſted Encycl. Tom. I. p. 541.

(c) See Sanſon ubi ſup. p. 143.

Change of the Quality of the Air and Shadows, the *Climates* ſhew the great Difference of the Hours of the Day, *&c.* (a).

This Diviſion by *Climates*, is ſomewhat more diſtinct and perfect than that by *Zones*, in as much as they divide the Earth into ſmaller Portions, and employ a greater Number of *Parallels*, whereas only 4 or 5 are concern'd in forming the *Zones* (b).

Nature.] There is great Variety among Authors concerning the Nature of *Climates*; Some deeming it eſſential to them to be bounded by *Parallels*, and following *Ptolomy* in his great Syntaxis, convert the *Equator* into a *Parallel*; as *Clavius*, *Langius*, *Moretus*, *Briettius*, &c. Others, for the ſame Reaſon, ſcruple to admit the *Equator* or *Poles* for Boundaries; as, *Maurolycus* and *Riccioli*. Some think, they ought to begin at the *Equator* to reckon the *Climates*; as *Briettius*, *Varenius*, *Gordon*, &c. Others, ſeveral Degrees on this Side where the ancient *Climates* began, and yet don't ſcruple to continue them beyond the Place where the ancient *Climates* ended; as *Blancanus*, *Moletus*, *Barocius*, *Clavius*, *Langius*, &c. Some think it eſſential to a *Climate*, to contain neither more nor leſs than a Space wherein the Length of the Day varies by Half an Hour; becauſe the Ancient *Climates* contain'd that Quantity: for which Reaſon, ſome of this Claſs extend them no farther than the *Polar Circles*, where the Day encreaſes by intire Days; as *Blancanus*, *Orontius*, *Clavius*, *Cluverus*, &c. Others on the contrary think, that it is limited to no particular Horary Dimenſion, but following *Ptolomy*'s Example, hold that a new *Climate* is to be drawn, as often as the Day lengthens a Quarter of an Hour, Half an Hour, or a Month, as *Riccioli*. Thus Men of great Abilities, are often puzzled about the moſt obvious Things; and hence ariſes great Variety among Authors, as to the Number, Beginning and End of the *Climates*; whereof preſently in the Hiſtory of *Climates*.

Number.] Of the different Opinions concerning the Number of *Climates*, we prefer, as the moſt ſimple and uniform, that which conſtitutes Sixty in Number: Thirty between the *Equator* and *North Pole* for one *Hemiſphere*, and as many between the *Equator* and the *South Pole* for the other *Hemiſphere*. The Firſt ſort therefore may be called *Climates of Artificial Days*, or *Horary Climates*; the Latter, *Climates of Days continued*, or *Menſtrual Climates*.

The 30 *Climates* of each *Hemiſphere* are divided into *Climates of Half Hours* or *Artificial Days*, and *Climates of Days continued*.

(a) Alſted ubi ſupr. Carpenter Geogr. p. 211. (b) See Carpenter Geogr. p. 210.

The *Climates of Half Hours*, are reckon'd from the *Equator* to the *Polar Circles* to the Number of 24; becauſe the *Artificial Day* conſiſting always of 12 Hours at the *Equator*, and of 24 Hours at the *Polar Circles*, the Increaſe is of 12 Hours, which make 24 Half Hours, and conſequently ſo many *Climates*.

The *Climates of Days continued*, are reckon'd from the *Polar Circles* to the *Poles*, they are in Number 6, each containing an Interval of a Month; for the greateſt Length of the *Artificial Day* at the *Polar Circle*, being that of a *Natural Day* or 24 Hours, and of 6 Months at the *Poles*, conſequently there is in that Space an Increaſe of 6 Months.

Proportion.]

Altho' the Time or Horary Meaſure by which the Breadth or Diſtance of the *Climates* is regulated be equal, yet the *Climates* themſelves are very unequal; thoſe of *Artificial Days* are larger the nearer they are to the *Equator*, and diminiſh in Proportion as they approach the *Polar Circles*: Thus the firſt *Climate* is above twice the Breadth of the 7th, four Times as broad as the 12th, and broader than all the remainining Twelve. The *Amplitude* of the Firſt is 8 Degrees 25 Minutes, of the Twelfth 1° 52 Minutes, and of the 24th but 3 Minutes.

The *Climates of continued Days* on the contrary are larger in Proportion as they draw nearer the *Poles*, and diminiſh towards the *Polar Circles*. Thus the *Amplitude* of the 25th *Climate* is 59 Minutes, that of the 27th 3 Degrees 50 Minutes, and that of the 30th ſix Degrees, that is, above ſix Times more than that of the 25th.

So that in the firſt Sort of *Climates*, where the Day lengthens ſloweſt, the *Climates* are broadeſt, and narroweſt where the Day lengthens faſteſt; and contrarywiſe in the ſecond Claſs.

The Inequality of the Breadth of the *Climates*, proceeds from the different Obliquities of the *Horizons* of Places in reſpect of the Courſe of the Sun, when he is in the *Tropic*; at which Time he determines the Length of the longeſt Day in every Part of the *Hemiſphere* where he then is.

Uſe.]

The Uſe of the *Climates* is twofold; the firſt and primary Uſe, is to mark the various Lengths of the Days at certain Intervals; the Second to determine thereby the Degree of *Latitude* at ſuch Intervals.

Hiſtory.]
Origin.]

Before the Method of finding the *Altitude of the Pole* was known to the *Greeks*, and even a long Time after, for want of Obſervations of that Sort, they determined the Latitude or Diſtance of Places from the *Equator*, by the Difference of the longeſt Day obſerved

ſerved in each: This ſuggeſted the Expedient of dividing the Earth into ſeveral Portions or little *Zones*, from the *Equator* towards either *Pole*, by drawing Lines according to Horary Intervals.

Theſe Lines the *Greeks* call'd *Parallels*, and the *Romans Circles* (a), and the intermediate Spaces *Climates*.

Eratoſthenes is the firſt we find, who 246 Years before Chriſt introduced this Sort of Diviſion of the Earth (*A*); altho' the Foundation was laid about 70 Years earlier by *Dicearchus*, who firſt drew a *Parallel Line* in Maps (b). To this *Parallel Eratoſthenes* ſeems to have added 7 more, drawn at Horary Intervals, of the Diſtance of Half an Hour each, and thereby formed 7 *Climates*; which took their Names, as well as the *Parallels*, from ſome remarkable City, Iſland, River or Sea, thro' which the *Parallels* paſs'd. Thus the firſt *Climate* and *Parallel* had the Name of *Meroe*, the Second of *Syene*, the Third of *Alexandria*, the Fourth of *Rhodes*, the Fifth of *Rome* or the *Helleſpont*, the 6th of the *Euxine Sea*, the 7th of the Mouth of the *Boriſthenes* (c).

Strabo in treating of the *Climates* reckons 10 *Parallels*, the Firſt beginning in the Cinnamon Country below *Meroe*, in 12 Degrees 34 Minutes of *Latitude*; the laſt paſſing beyond *Ireland*, where the *Solſtitial* Day is almoſt 24 Hours. The firſt ſeven *Climates*, reckoning from the Firſt to the 8th *Parallel*, contain Spaces of Half an Hour each; the 8th *Climate* that of an Hour, and the Laſt of 7 Hours.

Afterwards, more of the Earth being diſcovered, which required the Addition of many *Climates* or *Parallels* to the former; a more regular and extenſive Diviſion was form'd. This ſeems to have been introduced by *Marinus Tyrius* or *Ptolomy*, who in all likelyhood took it from *Hipparchus*. It conſiſts of 21 *Parallels* to the *North*, and 3 to the *South* of the *Equator*. The firſt of the *Northern Parallels* is drawn thro' *Taprobana* in 4 Degrees 15 Minutes *Latitude*, where the *Solſtitial Day* is 12 Hours 15

(a) Plin. Hiſt. Nat. L. 6. c. 34. (b) Agathem. de Geogr. L. 1. c. 1. (c) Ibid, c. 8.

(*A*) *Dodwell* ſays, that *Scymnus Chius* aſcribes the Invention of the *Climates* to *Eratoſthenes*; and that this laſt Author ſeems to have taken them from *Hipparchus*, who made uſe of Aſtronomical Lines in exhibiting the Poſition of Places (1). but *Scymnus* only ſays, that *Eratoſthenes* wrote a Geography with *Climates* and *Figures*, and he muſt have been poſterior to *Hipparchus*, who criticis'd him (2).

(1) Vide Strab. Geogr. L. II. Et Dodw. Diſſert. de Scym. Chi. p. 99. 2p. Hudſon Geogr. Vet. Græc. Vol. II. (2) Vid. Scym. Chium, V. 113.

Minutes long: The Laſt paſſes thro' *Thule* in 63 Degrees of *Latitude*, where the Day is 20 Hours long. The firſt 14 *Parallels* are drawn at quarterly Intervals, the 4 following at the Diſtance of Half an Hour each, and the 3 Laſt differ by Spaces of an Hour. The 2 Parallels below the *Equator* were drawn at the intervals of half an Hour. By this new Order of *Parallels*, each of the 7 *Climates* came to be divided into 2 Parts, as appears from the firſt Table.

The Reaſon why *Ptolemy* does not carry on the Diviſion all along according to the Increaſe of a Quarter of an Hour, is to preſerve a due Diſtance among the *Parallels*, and prevent crouding the Repreſentation; the Horary Spaces growing narrower the farther they recede from the *Equator* (a).

Pliny divides the Earth from *South* to *North* by 7 *Parallels* or *Circles*, as the *Romans* call'd them (b), including ſeveral Regions and Cities between, ſomewhat agreeable to the 7 *Climates* of the *Greeks*, but not ſo accurate: after which, he adds 3 Segments or Circles towards the *North*, the laſt drawn thro' *Thule*, where the Day was ſuppoſed to be 24 Hours long; and Two to the *South* of the *Equator*, One paſſing thro' *Syene*, the other *Meroe*: ſo that the Number of Circles in all are Ten.

It was the Cuſtom of the ancient *Geographers*, not to extend this Diviſion by *Horary Parallels* beyond the known Earth: Accordingly *Eratoſthenes* employ'd but 8 *Parallels*. And tho' *Hipparchus* had divided the 4th Part of the Globe from the *Equator* to the *North Pole* by *Horary Parallels*; yet *Strabo* ſelects only 10, reckoning all the reſt to the *North* or *South* of the inhabitable or known Earth to be uſeleſs to the *Geographer* (c). Nay *Ptolemy* (d) himſelf, who in his *Great Syntaxis* or *Almageſt*, as an *Aſtronomer*, carries on the Diviſion by *Parallels* from the *Equator* to the *Pole*, like *Hipparchus*; yet in his *Geography* (e) he confines their Number to 23, reckoning 21 to the *North* and 2 to the *South* of the *Equator*, as appears by comparing the 2 firſt Tables.

Theſe Tables differ in two other reſpects, beſides the Number of *Parallels*: (1.) The *Parallels* according to his great *Syntaxis* begin from the *Equator*, agreeable to *Aſtronomical Principles*, which have no regard to the Quantity of Earth known; but the firſt *Parallel* in his *Geography* is the Second in his *Syntaxis*: Becauſe, as he obſerves, the Parts under the *Equator*, or next to it, did not fall under the Conſideration of *Geography*, on Account of the Uncertainty of their being inhabited (a). Which ſeems to us but a very weak Argument, conſidering he begins the Diviſion from the *Equator* in his *Syntaxis*; becauſe he ſays, 'tis poſſible, and many believe the Earth at the *Equator* is inhabited (b), and that he carrys the Diviſion to the *South* of the *Equator*. (2.) In his *Syntaxis* the *Parallels* increaſe by Quarters of Hours as far as the 25th *Parallel* incluſively; thence by Half Hours to the 29th, and thence by Hours to the 33d incluſively, and thence by Months to the 39th; but the *Geographical Parallels* increaſe by Quarters to the 14th incluſively, then by Half Hours to the 19th, and thence by Hours to the 21ſt, where they end in 63 Degrees of *Latitude* (c).

(a) Vid. Ptol. Almag. L. 2. c. 6. ubi de Parall. 26. & ſeqq. (b) Vid. Plin. Hiſt. Nat. L. 6. c. 34. (c) Strab. Geogr. L. 2. (d) Vid. Ptol. Magn. Syntax. L. 2. c. 6. (e) Vid. ejuſd. Geogr. L. 1. c. 23.

The *Arabs* and *Perſians*, who cultivated the *Greek Geography*, revived the old Diviſion by *Climates*, drawing a *Parallel* thro' the Middle of each (d), but differ about the Order of them as to *Latitude*. Some place the Beginning of the firſt *Climate* at the *Equator*, and the End of the Laſt where the inhabitable Earth terminates to the *North*, that is, in 60 Degrees; but *Abu'lfeda* holds, that whatever lies between the *Latitude* of 12 Degrees 40 Minutes and the *Equator*, is without the firſt *Climate*; and what lies beyond 50 Degrees 20 Minutes is without the 7th *Climate*, (e) agreeable to the 3d Table. The *Arabs* were ſo devoted to this Diviſion by *Climates*, that they regulated their *Geographical Deſcriptions* according to it, as appears by that called the *Nubian Geographer*. *Abu'lfeda*, who flouriſh'd about *A. D.* 1310 to free the *Oriental Geography* from the Confuſion in which this Method involved it, began a New Diſtinction of *Climates* into *True* and *Known*, underſtanding by a *True Climate*, one of the 7 abovementioned; and by a *Known Climate*, any Country or Kingdom, containing ſeveral Provinces or Subdiviſions (f). a Diſtinction which only ſerves farther to demonſtrate their Fondneſs for *Climates*.

Before the Revival of Learning and Diſcoveries, the *Weſtern Europeans* reckon'd 7 *Climates* only, which they ſeem to have taken from the *Arabs*; *John de Sacro Boſto* (g) particularly follows *Al Farghâni*: *Stoefler*, who wrote about 1516, and Others, retain the ſame Number, following *Proclus*, containing 15 *Parallels*; the 2d or *Middle Parallel* of the *Firſt Climate* paſſing thro' *Meroe*, and that of the 7th paſſing thro' the *Ripheus* Mountains in 48 Degrees 40 Minutes *Latitude*. However, *Peter Apian*, *Stoefler's* Contemporary reckons 9 *Climates* to the *North*, and as many to the *South* of the *Equator*; the laſt *Parallel* paſſing thro' *Denmark* in 55 Degrees 30 Minutes *Latitude*.

(a) Vid. Ricciol. Geogr. Reform. L. 7. c. 16. p. 281. (b) Ptol. Almag. L. 2. c. 6. (c) Ibid. (d) Vid. Al Farghâni Elem. Aſtron. c. 8. (e) Calcaſhendi Tom. II. p. 114. ap. Hyde in Not. ad *Peritſol.* Itin. Mundi p. 31. (f) Greaves Pref. ad Abulfed. Chorasm. Deſcr. p. 13. ap. Hudſon Geogr. Vet. Græc. Vol. III. (g) De Sphæra, c. 3.

But *Navigation* having at length laid open the Earth almoſt from *Pole* to *Pole*; the *Geographers* thought fit to enlarge the Number of *Climates*, Some on the *North*, and Others on both Sides of the *Equator*. But on this Head, there is great Variety of Opinions among them, whereof we have already aſſign'd the Reaſons; Some extend them as far as the *Polar Circles* only, as *Girava*, *Langius*, *Herigonus*, *Blancanus*, *Orontius Finæus*, *Varenius*, &c.

Some continue them to the *Poles*, as *Moletus*, *Barocius*, *Janſſon*, *Blaew*, *Britius*, *Riccioli*, and all other *Geographers* for the moſt part ſince. Some continue tha *Parallels*, but not the *Climates*, as *Royas*. Others inſtead of dividing the *Frigid Zones* into *Climates* or *Parallels*, add the Quantity of Continued Light, as *Clavius*, *Cluverus*, *Varenius*.

Differ as to Number of Climates.

Beſides the abovementioned Diſagreement among Authors, they generally differ as to the Number of *Climates*, or *Parallels*, or the Beginning of them.

Some reckon 23 Climates and 45 Parallels between the *Equator* and the Polar Circle, where the Day is 24 Hours long, as *Girava*, *Clavius*, *Langius*, *Herigonus*, *Moletus*, *Alſtedius*.

Some 23 Climates and 48 Parallels, as *Blancanus*.

Others 24 Climates and 48 Parallels, as *Orontius*, *Roas*, *Cluverus*, *Brietius*.

Some 24 Climates and 49 Parallels, as *Barocius* and *Varenius*.

Some 14 Climates and 28 Parallels, as *Riccioli*.

The Cauſe of this Difference ariſes chiefly from their beginning to reckon their *Climates* and *Parallels* differently, for all of them, excepting *Riccioli*, make their *Climates* of equal Horary Spaces of half an Hour each, excepting the laſt *Climate*, and draw their *Parallels* at quarterly Spaces.

Thoſe therefore who make 23 *Climates* and 49 *Parallels*, reckon the *Equator* for the firſt *Parallel*, but begin their *Climates* at the fourth; thoſe who reckon 24 *Climates* and 49 *Parallels* begin their *Parallels* at the *Equator*, but their *Climates* at the ſecond *Parallel*; excepting *Brietius*, who begins his *Climates* at the *Equator*.

The Authors who count 23 *Climates* and 48 *Parallels*, exclude the *Equator*, and begin the *Climates* at the third *Parallel*.

On the contrary, thoſe who reckon 24 *Climates* and 48 *Parallels*, excluding the *Equator*, begin the *Climates* at the firſt *Parallel.*

P. Riccioli differs from all the *Geographers* as well in the manner of dividing his Climates, as beginning and ending them. He begins them on each ſide of the *Equator*, drawing the firſt Parallel where the Day lengthens a quarter of an Hour; ſo that between the firſt Northern and Southern Parallels there is left a Climate which is not numbered, divided in the middle by the *Equator*. In conſequence of this Diſtribution, the Poles do not terminate his Climates, but fall in the middle of the two laſt: Between the *Equator* and Polar Circle he reckons but 13 Climates and a half, excluſive of the half Climate next the *Equator*. The Reaſon that he hath fewer Climates and Parallels than the reſt, is becauſe he does not continue them at equal Intervals; the firſt 16 being drawn at quarters of Hours, the next 8 at half Hours, and the four laſt at Hours.

Almoſt all the abovementioned Authors, in imitation of the Antients, denominate their Climates from ſome Country or City thro' which they paſs, as thoſe of *Venice* and *Milan*, *Podolia* and *Little Tartary*.

Thoſe who divide the *Frigid Zones* into Climates alſo differ in the Number, ſome make 23, as *Moletus* and *Barocius*; Whence the whole Number of Climates from the *Equator* to the *Pole*, according to the firſt is 46, and according to the latter 47, and the whole Number of Parallels, according to both 96. Others reckon but 6 Climates within the *Frigid Zones*; ſome dividing them by Parallels, as *Riccioli*, (who makes 12, the *Pole* not being conſidered as one;) others not, as *Brietius*, and moſt others.

Moletus and *Barocius* regulate the Frigid Climates not by the Increaſe of the Day, but by the Altitude of the *Pole*: drawing a Parallel at every 30 Minutes of Latitude, ſhewing the Arch of the *Ecliptic* with the Quantity of continued Light in each Parallel.

Riccioli, *Brietius*, *Gordon*, *Harris*, and moſt others, regulate their Climates by Days of a Month's continuance; the firſt drawing his Parallels at intervals of a Fortnight's Light.

Roias, who continues the Parallels, but not the Climates, makes 22; drawing the firſt Eight at Intervals where the Light is of 120 Hours, or 5 Days continuance, and the 12 following at Intervals of 10 Days each: the next Parallel, which ends at the Pole, has no increaſe of Light; and the laſt increaſes by a Day and half, Laſtly, Of thoſe who add the Quantity of continued Light in the *Frigid Zones*, without dividing them into Climates or Parallels, ſome regulate their Tables by the Degrees of Latitude, marking the Quantity at every Degree, as *Clavius*; others by menſtrual Intervals, marking the Latitude where the Light increaſes by an entire Month, as *Cluverus*, *Varenius*.

The Diviſion of the Earth by equal Horary Spaces makes the Climates very unequal; ſeeing the firſt is in breadth 505 Geographical Miles, or Minutes of a Degree, the ninth 197, and the 24th but 3 Miles; in a word, that the firſt Climate is broader than the 12 neareſt the Polar Circles. *Janſſon* therefore, and after him *Blaew*, rejecting this Horary Diviſion on account of its inequality, regulate their Climates (if they can be ſo called) by the Degrees of Latitude, drawing Parallels at every tenth Degree; ſo that they reckon but 10 Climates between the Equator and either Pole.

Maurolycus divides the Earth by Horary Parallels, but not by Climates; wherein he ſeems to be ſingular among the Moderns: although therein, as well as every thing elſe, he follows *Ptolomy*'s Tables of Climates, but chiefly that of his great *Syntaxis*; excepting that he begins his firſt Parallel at 4° 30′ of Latitude, and ends his 37th at 84 Degrees, the Pole itſelf not being properly a Parallel.

Differ as to Bounds of Climates.

There is found another Difference among Authors in computing the Degrees of Latitude thro' which the Horary Parallels paſs, according as they have employed a different Obliquity of the *Ecliptic*; ſome conſider the Obliquity 23° 30′, as *Orontius Finæus*; ſome compute from the greater and leſſer Obliquity, as *Langius*.

Riccioli makes the Obliquity 23° 30′ 20″, whence allowing for the Refraction, he puts the Arctic Circle in 65° 54′ 20″. But in all probability miſtakenly; the reſt generally calculating from the Obliquity of 23° 29′, drawing the Arctic Parallel at 66 Degrees 31 Minutes.

Cauſe of Differences among Authors.

Where there is ſo great a Variety among Authors concerning the Climates, one would imagine it was very difficult to fix a Rule for drawing them. The earlier Modern *Geographers* ſeem to have been embaraſs'd by the Variety they found in the Climates (a) of the Antients, which at different times had different ſorts of Diviſions, Beginnings and Endings. And theſe firſt having gone aſtray, puzzled thoſe who came after them; whereas had they attended to the nature of the Thing,

(a) Carpen. Geogr. L. 1. C. 9. Pag. 214.

Thing, they would probably all have agreed, at leaſt as to the principal Points. For ſeeing a Climate is a Diviſion of the Earth according to the Variation of the Day, not the Latitude; and the Earth was in a manner diſcovered from Pole to Pole, three Things will neceſſarily follow therefrom.

Rules for drawing the Climates.

1. That the Diviſion ſhould be regulated by the lengthening or increaſe of the Day, and not at all by the Quantity of Earth contained in a Climate. Hence the Tables of *Moletus*, *Barocius*, *Brietius*, *Riccioli*, are preferable to thoſe of *Roias*, the *Janſſons*, or *Blaews*.

2. That it ſhould begin from the Equator, which ought to bound the firſt Climate, in regard the Increaſe of the Day begins from thence: but not to be conſider'd as the firſt Parallel, which ought to be drawn at the firſt Increaſe of the Day, and paſs thro' the Middle of the Climate: So that the Polar Circle might be the 48th Parallel, and bound the 24th Climate. Hence all the above-mentioned Tables are erroneous, nor do we know of any Author who hath hit on this Method, tho' the moſt natural and obvious; according to the 4th Table.

3. That they ſhould be continued to, and end at the Poles, as the Increaſe ends there. Hence the Tables of *Moletus*, *Barocius*, *Brietius*, and others, are preferable to thoſe of *Blancanus*, *Orontius*, *Clavius*, *Cluverus*, *Varenius*, and *Riccioli*, who, tho' he continues the Climates to the Poles, does not end them there, as before obſerv'd. As to the Interſtices, at which the Horary Parallels ſhould be drawn, that is a Thing wholly arbitrary; but conſidering that at preſent Horary Parallels are not employ'd in projecting Maps as formerly, and that the Uſe of Tables of Climates is chiefly to ſhew the gradual lengthening of the Day in all Parts of the Earth in a certain Proportion, the Horary Spaces had better be equable than of various Breadths, and narrow than broad.

Tables of Horary Variation.

However, it would alſo be neceſſary to have Tables ſhewing the Variation of the Day in every Degree or leſſer Portion of Latitude; ſuch as that given by *Riccioli*, for the Space between the Equator and Polar Circle; (a) and that by *Clavius*, for the *Frigid Zone* (b); but then they could not properly be call'd Tables of Climates and Horary Parallels.

In calculating ſuch Tables a common Fault of Authors ſhould be avoided, in making the Day and Night equal in the ſame Degree of North and South Latitude; ſeeing the Northern Day

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(a) Ricciol. Geogr. Reform. L. 6. C. 7. P. 274. (b) Ibid. C. 8. P. 285.

is longer and Night ſhorter, becauſe the Sun continues eight Days longer in the Northern than in the Southern Signs (a).

Queries *concerning the Climates of the Antients.*

Before we conclude with Climates, it will be proper to enquire Whether the Climates of the Antients were limited to any particular Number. Alſo Whether thoſe we call the Seven Climates were really juſt that Number, and Where the Seven Climates began and ended.

In anſwer to the *firſt* Quere, it appears to us that the Antients conſider'd all Horary Spaces, or Spaces contained between two Horary Parallels, as Climates; thus *Strabo* ſays, that by means of the *Meridians* and *Parallels* the *Climates*, Winds, *&c.* are eaſily diſtinguiſhed (b); And that there was no determining whether *Alexandria* or *Babylon* was ſituate furtheſt to the North, or what their Diſtance was, without knowing the Climates (c). But if it be objected that the Word *Climate* here may be taken to ſignify the length of the longeſt Day, in which Senſe the Ancients alſo uſed it; his mentioning the Climate of *Britain* (d) as well as *Meroe* and *Rhodes*, is an unexceptionable Proof to the contrary, ſince *Britain* was not comprehended within the Seven Climates: Beſides, in treating expreſsly of the Climates, he extends them according to *Hipparchus* beyond *Ireland*. (e)

However, it muſt be confeſs'd that from the Time the *Geographers* changed the Diviſion from Intervals of half Hours to thoſe of Quarters, they choſe to reckon by Parallels rather than Climates; which Denomination ſeems to have been reſtrain'd more peculiarly to the Ancient Seven. Thus *Ptolomy* divides the Earth by Parallels and not by Climates, nor does he ſo much as mention the Climates in that Place, altho' he names the Parallels by which they were diſtinguiſhed (f). *Agathemeres* alſo in his Deſcription of the *Parallels*, obſerves, that they ſhew the Situation of the Climates, by *which*, ſays he, *the increaſe and decreaſe of Days and Nights are determined*; and yet in enumerating the Parallels, he mentions no Climates beſides the Seven, which he particularly remarks at their reſpective Parallels (g).

And here we cannot but take notice of ſome other Chimeras of the Moderns on this Head, who have imagined Diſtinctions of whole Climates and half Climates, Parallels without breadth, and Parallels with breadth. They ſay the Ancients divided their Climates, by a Line, into half Climates, each of which was called

a

(a) Ibid. c. 12. p. 289. (b) Strab. Geogr. l. 2. p. 207. (c) Ibid. l. 1. p. 11. (d) Ibid. l. 2. p. 214. (e) Ibid. p. 242. (f) Vid. Ptol. Geogr. l. 1. c. 23. (g) Vid. Agathem. de Geogr. l. 1. c. 8.

a Parallel; ſo that the Climate contain'd 2 Parallels or Demi-Climates (a). Hence a Parallel is conſider'd by them two Ways, either as a Line or Circle, ſuch as Parallels of Latitude are; or for a Space included between two Circles (b), as thoſe we are ſpeaking of; and we are told that the neglect of this Diſtinction hath made ſome *Geographers* ſpeak improperly (c); whereas rather we apprehend the Uſe of it hath created much Confuſion; for it does not appear that the Antient *Greeks* had any Notion of Parallels in that Senſe, which they conſider'd meerly as Circles bounding or dividing the Climates; as appears in that they never mention the breadth of a Parallel, but compute the breadth of the Climatical Spaces by the Diſtance of one Parallel from another. Indeed *Pliny* aſcribes ſeveral Countries of different Latitudes to each of his 7 Circles: but altho' hereby he may ſeem at firſt ſight to conſider the Parallels not as meer Circles without any breadth, but for the Spaces of the Climates themſelves; yet his Intention might be only to enumerate the Places that lay between the Parallels. Be that as it will, nothing is to be concluded from his Scheme, which is very rude, and ſhews he had not a juſt Notion of the Doctrine of the *Greeks* in this Point.

[*Anſwer* 2.] To the ſecond *Quere*, Whether we believe thoſe we call the 7 Climates, by which we underſtand thoſe formed about the Time of *Eratoſthenes*, were really juſt that Number? we anſwer in the Affirmative: This appearing not only from the Uſe which *Pliny*, and the Oriental *Geographers*, who follow the *Greeks*, make of Seven; but the Teſtimony of one of the Antient *Geographers*, who expreſly mentions the 7 Climates (d), and their initial Parallels. However, ſome of the Moderns have aſſerted there were but 5 Climates, as *Mercator*, and others that there were but 6. The miſtake of theſe laſt ſeems to have ariſen from hence, that they meet with only 7 Parallels, whereof the firſt and laſt they make Boundaries: But it muſt be obſerved, that as only the initial Parallels are mention'd, and the Diviſion proceeds by Intervals of half an Hour, the Bound of the Seventh Climate muſt be ſuppoſed at that Diſtance. Which will appear more clearly from an Anſwer to the laſt *Quere*, *viz.*

[*Anſwer* 3.] Where the Seven Climates began and ended? It is generally imagin'd that the Seven denominated Parallels paſs thro' the Middle of the Climates; but this Opinion is refuted by *Agathemeres*, who tells us, the Parallel paſſing thro' *Meroe*, is the Beginning of the Climate of the ſame Name (e). Hence it follows that the Parallel of *Boryſthenes*, where he places the 7th Climate, is alſo the Beginning of that Climate: and as 6 Spaces of half Hours, according to the ſame Author, paſs between the firſt and ſeventh Parallel; conſequently a like Space, or at leaſt ſome Space, muſt be added to make out the 7th Climate. That the bounding Parallel is not mention'd, can be no Objection with thoſe who hold the Parallels to paſs thro' the Middle of the Climates; for in ſuch Caſe, both the initial and final Boundaries will be wanting.

(a) Sanſon's Introd. à la Geogr. p. 143. (b) Vid. Cluver. Introd. Geogr. l. 1. c. 6. (c) See Carpenter's Geogr. p. 217. (d) Agathem. ubi ſupra, (e) Ibid.

◆

I. TABLE

I. TABLE *of* Parallels *and* Climates *according to* Ptolomy *in his* Geography (a) *and* Agathemeres (b).

Parallels.	*Degrees of Latitude.*		*Length of the Day.*		*Spaces of an Hours incr.*		*Leng. of ½ the Paral.*	*Climates.*
	Deg.	*Min.*	*H.*	*M.*	*Deg.*	*Min.*	*Stadia.*	
0	0	0	12	00			90,000	
1	4	15	12	15				
2	8	25	12	30				
3	12	30	12	45				
4	16	25	13	00	16	25	86,333	1 thro' *Meroe.*
5	20	15	13	15				
6	23	45	13	30			82,336	2 *Syene.*
7	27	30	13	45				
8	30	20	14	00	13	45		3 *Alexandria*
9	33	20	14	15				
10	36	00	14	30			72,812	4 *Rhodes*
11	38	35	14	45				
12	40	55	15	00	10	35		5 *Helleſpont*
13	43	5	15	15				*Byzantium.*
14	45		15	30				6 *mid. Eux. S.*
15	48	30	16	00	7	35		7 *Boryſthenes*
16	51	0	16	30				
17	54	0	17	00	5	30		
18	56	0	17	30				
19	58	0	18	00	4			
20	61	0	19	00	3			
21	63	0	20	00	2		40,854	thro' *Thule*

Parallels to the South of the Equator.

0	0	0	12	0
1	8	25	12	30
2	16	25	13	00

Thro' *Raptum Prom.* and *Cattagara* oppoſite to *Meroe.*

The Table of *Agathemeres* differs from *Ptolomy* only in this, that *Ptolomy* omits the Matters in the 4th and 5th Columns; and makes no mention of Climates: The Places in the 6th Column being conſider'd by him, only as the Denominations of the moſt remarkable Parallels.

(a) Ptol. Geo. l. 1. c. 23. (b) Agathem. de Geogr. ubi. ſupra, l. 1. c. 8.

II. TABLE of Parallels according to *Ptolomy* in his great *Syntaxis* or *Almageſt* (a).

Parallels.	longeſt Day.		Latitude.		Merid. Shadow by Gnomon of 60 Parts.						Names of the Parallels.
					Summ.		Equin.		Winter		
	H.	M.	De.	M.	Par.	M.	Par.	M.	Par.	M.	
1	12	0	0	0	26	30	0	0	26	30	The *Equator*
2	12	15	4	15	21	20	4	25	32	0	thro' *Taprobane*
3	12	30	8	25	16	50	8	50	27	54	thro' the *Avalite Bay*
4	12	45	12	30	12	0	13	20	44	10	thro' the *Adulitic Bay*
5	13	0	16	27	7	45	17	45	51	0	thro' the Iſle of *Meroe*
6	13	15	20	14	3	45	22	10	58	10	thro' *Napata*
7	13	30	23	51	0	0	26	30	65	50	thro' *Syene*
8	13	45	27	40	3	30	31	50	74	10	thro' *Ptolemais* of *Thebais*
9	14	0	30	22	6	50	35	12	83	15	the lower part of *Egypt*
10	14	15	33	18	10	0	39	30	93	5	the Middle of *Phœnicia*
11	14	30	36	0	12	55	43	50	103	20	thro' *Rhodes*
12	14	45	38	35	15	20	47	50	114	55	thro' *Smyrna*
13	15	0	40	56	18	30	52	10	127	50	thro' *Helleſpont*
14	15	15	43	5	20	50	55	55	140	15	thro' *Marſeille*
15	15	30	45	1	23	15	60	0	155	15	thro' Middle of *Euxine Sea*
16	15	45	46	51	25	30	63	55	171	35	thro' the Springs of *Danube*
17	16	0	48	32	27	30	67	50	188	35	the Mouth of *Boryſthenes*
18	16	15	50	0	29	55	71	20	208	20	thro' Mid. of *Palus Mæotis*
19	16	30	51	35	31	25	75	25	229	20	thro' South part of *Britain*
20	16	45	52	50	33	20	79	5	253	10	thro' Mouth of the *Rhine*
21	17	0	54	1	34	55	82	35	278	5	thro' Mouth of *Tanais*
22	17	15	55	0	36	15	85	20	304	40	*Brigantium* in *Gr. Britain*
23	17	30	56	0	37	20	88	50	335	15	thro' *Great Britain*
24	17	45	57	0	39	20	92	25	372	40	*Catmallonum* in *Britain*
25	18	0	58	0	40	44	96	0	419	5	South parts of little *Britain*
26	18	30	59	30							Mid. of *Little Britain.*

Appendix.

27	19	0	61	0
28	19	30	62	0
29	20	0	63	0
30	21	0	64	30
31	22	0	65	30
32	23	0	66	0
33	24	0	66	30

Months

34	1	67	15
35	2	69	30
36	3	73	20
37	4	78	20
38	5	84	0
39	6	90	0

III. TABLE

(a) L. 2. c. 6.

III. TABLE *of* Climates *according to* Abulfeda (a).

		Latitude		*Amplitude*			*Leng. of ½ Par.*	
		Degr.	*Min.*	*Degr.*	*Min.*		*Degr.*	*Min.*
1	Begin.	12	40					
	Mid.	16	$\frac{1}{2}\frac{1}{8}$					
	End	20	$\frac{1}{4}\frac{1}{8}$	7	$\frac{2}{3}\frac{1}{8}$		172	27
2	Begin.	20	$\frac{1}{4}\frac{1}{8}$					
	Mid.	24	40					
	End	27	$\frac{1}{1}\frac{2}{3}$	7	03		164	20
3	Begin.	27	$\frac{1}{2}$					
	Mid.	30	$\frac{2}{3}$					
	End	33	$\frac{1}{2}\frac{1}{8}$	omitted			154	50
4	Begin.	33	$\frac{1}{2}\frac{1}{8}$					
	Mid.	36	$\frac{1}{3}\frac{1}{6}$					
	End	39	10	05	17	*P. M.*	144	17
5	Begin.	39						
	Mid.	41	15					
	End	43	$\frac{1}{4}\frac{1}{8}$	04	$\frac{1}{4}\frac{1}{8}\frac{1}{10}$ *fere*		135	22
6	Begin.	43	$\frac{1}{3}\frac{1}{8}$					
	Mid.	45	6					
	End	47	12	3	$\frac{1}{2}\frac{1}{8}\frac{1}{5}$		124	27
7	Begin.	47	12					
	Mid.	48	$\frac{1}{2}\frac{1}{4}\frac{1}{8}$					
	End	50	$\frac{1}{3}$	3	8		119	23

(a) Ex Calcaſhendi, ap. Hyde in Not. Peritſol. Itin. Mundi, p. 31.

IV. TABLE *of* Climates *and* Parallels *according to our own* Hypotheſis.

Climates	*Parallels*	*Longeſt Day*		*Latitude*		*Amplitude*	
		H.	*M.*	*Deg.*	*Min.*	*Deg.*	*Min.*
Equator	0 Begin.	12	0	0	0		
1	1 Mid.	12	15	4	15	0	1
	2 End	12	30	8	25	8	25
2	3 Mid.	12	45	12	30		
	4 End	13	0	16	25	8	
3	5 Mid.	13	15	20	15		
	6 End	13	30	23	50	7	25
4	7 Mid.	13	45	27	40		
	8 End	14	0	30	20	6	30
5	9 Mid.	14	15	33	40		
	10 End	14	30	36	28	6	8
6	11 Mid.	14	45	39	2		
	12 End	15	0	41	22	4	52
7	13 Mid.	15	15	43	32		
	14 End	15	30	45	29	4	7
8	15 Mid.	15	45	47	20		
	16 End	16	0	49	1	3	31
9	17 Mid.	16	15	50	33		
	18 End	16	30	51	58	3	7
10	19 Mid.	16	45	53	17		
	20 End	17	0	54	27	2	49
11	21 Mid.	17	15	55	34		
	22 End	17	30	56	37	2	10
12	23 Mid.	17	45	57	32		
	24 End	18	0	58	29	1	52
13	25 Mid.	18	15	59	14		
	26 End	18	30	59	58	1	20

Climates	Parallels	Longest Day		Latitude		Amplitude	
		H.	M.	Deg.	Min.	Deg.	Min.
14	27 Mid.	18	45	60	40		
	28 End	19	0	61	18	1	20
15	29 Mid.	19	15	61	55		
	30 End	19	30	62	25	1	7
16	31 Mid.	19	45	62	54		
	32 End	20	0	63	22	0	57
17	33 Mid.	20	15	63	40		
	34 End	20	30	64	6	0	44
18	35 Mid.	20	45	64	30		
	36 End	21	0	64	49	0	43
19	37 Mid.	21	15	65	6		
	38 End	21	30	65	21	0	32
20	39 Mid.	21	45	65	35		
	40 End	22	0	65	47	0	26
21	41 Mid.	22	15	65	57		
	42 End	22	30	66	6	0	19
22	43 Mid.	22	45	66	14		
	44 End	23	0	66	20	0	14
23	45 Mid.	23	15	66	25		
	46 End	23	30	66	28	0	8
24	47 Mid.	23	45	66	30		
	48 End	24	0	65	31	0	3
		Months					
25		1		67	30	0	59
26		2		69	30	2	0
27		3		73	20	3	50
28		4		78	20	5	0
29		5		84	00	5	40
30		6		90	00	6	0

Uſe of the **Tables.**

It is eaſy by theſe Tables to find what Climate any Country or City lies in, (ſuppoſing either the length of the ſolſtitial Day in any Place, or the Degree of Latitude to be known) by means of the Column of Climates correſponding to the other Columns which expreſs the Latitude and length of the Day. Or without the Tables the Climate may be found by the length of the Day: for between the Equator and the Polar Circles there will be ſo many Climates, as there are half Hours above 12, which is the length of the Day at the Equator: Thus, ſuppoſing you would know what Climate *London* is in, where the longeſt Day is 16 Hours, 26 Minutes, deduct 12, there remain 4 Hours 26 Minutes, which make 8 half Hours, and almoſt another; whence it follows, that *London* lies in the 8th Climate, very near the beginning of the 9th.

CHAP. V.

The Diviſion of the Earth by Meridians *and* Parallels.

Diviſion *of the Earth by*

WE come in the laſt Place to the Diviſion of the Earth by Meridians and Parallels of Latitude, which is the moſt eſſential of all the Aſtronomical Diviſions.

This Diviſion may be effected either with Parallels of Hours, or Parallels of Latitude.

—**Parallels** *of Hours.*

The Diviſion with Meridians and Parallels of Hours was uſed by the Antients, but is now quite out of uſe; *Ptolomy* teaches the Method of it (a): The Parallels were drawn in the manner exhibited in the Table, which we have inſerted in the foregoing Section of Climates (b); ſome at every quarter of an Hour, ſome at half Hours, and other Diſtances; and the Meridians at every third part of an Hour, or diſtance of 5 Degrees of Longitude: ſo that this was a Diviſion wholly regulated by Time. From hence it ſhould be thought that *Ptolomy* regulated his Maps according to this Horary Projection: and yet in his Tables the Situations of

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(a) Ptol. Geogr. l. 1. c. 23, & ſeqq.

(b) See the Diviſion by Climates, p. 103.

Places are adjuſted according to Longitude and Latitude. His Rules for projecting Maps are alſo accommodated to this Method (a): And the Maps at preſent inſerted in his *Geography*, drawn by *Agathodæmon*, a Tradeſman of *Alexandria*, from thoſe Tables, are projected with Parallels of Latitude. However that be, this Horary Diviſion is incommodious on account of the Diſpoſition of the Parallels, which is neither Uniform nor Minute enough, as hath been already obſerved (b).

—*Of Latitude*,

Theſe Defects are remedy'd by the Diviſion with Meridians and Parallels of Latitude, which ſucceeded the former. For we may conceive theſe Parallels as well as the Meridians drawn to every Degree, Minute, or leſſer Sub-diviſion of the Circumference of the Earth, every Place or individual Spot thereof having its diſtinct Meridian and Parallel.

—**Meridians**,

—**Gores** *and* **Rings**,

From the Account already given of the Meridians and Parallels, we may form two ſorts of Diviſions of the Earth by the Meridians and Parallels of Latitude, ſuppoſing them to be drawn at every Degree of the Circumference as above, according as we take them, ſeparately or in Conjunction. Taking them ſeparately, the Meridians divide the Earth from Eaſt to Weſt and from Weſt to Eaſt into 360 Gores or Slips, all of the ſame Dimenſions and Figure, reſembling the Cloves of an Orange: on the other hand, the Parallels divide the Earth from North to South into 180 Concentric Rings, lying one within another, and conſequently of different Dimenſions, tho' much the ſame Figure.

—**Degrees.**

If we take the Meridians and Parallels together, and conſider them as Circles interſecting one another at Right Angles, the Surface of the Earth will be divided by them into 64,800 Diagonals, or Squares of different Magnitudes in different Parallels. Thus the Squares or Diviſions in the ſecond Parallel will be leſs than thoſe in the firſt; thoſe of the third Parallel leſs than the Squares of the ſecond, and ſo on: loſing gradually of their Dimenſions from Eaſt to Weſt as they approach the Poles, without diminiſhing from North to South, becauſe the Parallels are equidiſtant: whereas the Meridians continually incline, and the Degrees of Longitude decreaſe in ſuch Proportion, that the Diagonals in the 60th Parallel will be leſs extended by one half from Eaſt to Weſt than the Diagonals of the firſt Parallel; and thoſe near the Pole will be contracted to one Minute of the Equator, that is, will be 60 times narrower one way than the other.

The

(a) Ptol. Geogr. l. 1. c. (b) Ibid.

Uſe *of this Diviſion.*

The Uſe of this Diviſion in *Geography* is to reduce Places to their true Poſitions on the Globe and Maps: for the Meridians and Parallels being the Lines or Marks which repreſent the Longitude and Latitude of Places, the Longitude and Latitude of any Place being found, it is thereby brought to its Meridian and Parallel, whoſe Point of Interſection exhibits the true Situation of ſuch Place, as well with reſpect to all other Places as the Earth itſelf. But the Uſe of the Terreſtrial Circles will be ſhewn more particularly in the following Book.

CHAP. VI.

The ſeveral Poſitions of the Globe, *and different Appearance of the* Terreſtrial Circles *in each.*

HAVING explained the Nature of the Terreſtrial Circles, and ſhewn in how many different Manners the Earth is ſuppoſed to be divided by them: it remains to conſider the Diverſity that is cauſed in the Appearance of them by different Poſitions of the Earth or Globe.

Poſitions *of the Globe.*

The Poſitions which a Globe is capable of, ariſe from the different Angles, that the Horizon of Places makes with the Equator. So that, as we have already obſerved, there are three kinds of Horizons (a), there are three kinds of Poſitions: Which alſo take the ſame Names, *viz. Right, Parallel* and *Oblique.*

—Right Sphere.

1. A Right or Direct Poſition, or Sphere, is when the Poles of the Earth are in the Horizon, and the Equator paſſes thro' the *Zenith* of the Place: for then all the Parallels cut the Horizon, which is one of the Meridians, at right Angles.

—Parallel.

2. A Parallel Poſition is when the Poles of the Earth are directly under the *Zenith* and *Nadir* of the Place, and the Equator is in the Horizon; for then the Equator and Polar Circles are Parallel to the Horizon.

3. The

(a) See Horizon, p. 72.

Oblique. 3. The Poſition is Oblique when the Pole is elevated any Number of Degrees leſs than 90, or when the *Zenith* of the Place is any where but in the Pole or Equator; for then the Equator and Parallels cut the Horizon obliquely: So that all the Inhabitants of the Earth, except under the Equator and the Poles, have the Earth in this Poſition; which is more or leſs Oblique, as the Pole is more or leſs elevated. And whereas there can be but one Right, and one Parallel Poſition, there may be as many Oblique as there are different Degrees of Elevation (a).

Uſe. On theſe Poſitions of the Globe are grounded the ſeveral different Projections of the Planiſphere uſed in Maps. They are alſo of Uſe for explaining the Celeſtial Properties of Places, as will be ſhewn in the following Book.

(a) Chamereau's Geogr. Pratiq. p. 20, 21.

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BOOK III.

Containing the Explanation of the Properties of Places by the Terreſtrial Circles.

CHAP. I.

The Uſe of the Circles *in exhibiting the* Terreſtrial Properties *of* Places.

Situation *Aſtronomical twofold.*

IN the Diviſion of the Globe by the Terreſtrial Circles, every Place muſt be interſected by its Meridian and Parallel; ſo that the Point of Interſection exhibits the individual Spot of the Earth where ſuch a Place is ſituated. Hence every Place is capable of two Sorts of Situation, one according to its Parallel, which is call'd the Latitude; the other according to its Meridian, which is termed its Longitude: And theſe may be called the *Aſtronomical Situations* of Places.

Latitude and Longitude *Etym.*

Latitude and Longitude ſimply and literally ſignify Length and Breadth; being derived from the *Latin* Words *Latitudo* and *Longitudo*.

Hiſtory *of the Terms.*

In this Senſe they became Terms in *Geometry* and *Geography*. They firſt paſs'd out of their primitive Signification in being apply'd to *Aſtronomy*, where inſtead of Extenſion they ſerved to denote Situation. Accordingly

cordingly the *Greeks* called the Situation of the Heavenly Bodies from North to South their Latitude, and that from Eaſt to Weſt their Longitude. In which they conform'd themſelves to the Cuſtom of reckoning the Latitude and Longitude, or Length and Breadth of the Earth; more being known to them from Weſt to Eaſt than from North to South.

Afterwards, when *Aſtronomy* came to be applied to *Geography*, the Terms Latitude and Longitude paſſed back again into their *Aſtronomical* Senſe. So that Latitude and Longitude in *Geography* had each of them two different Senſes, the one denoting Extenſion, the other Situation; which Senſes were to be diſtinguiſh'd only by the Subject. Thus if apply'd to a Country or Continent in general, they ſignify'd Extenſion: as the Longitude and Latitude of *Greece*, or of the Earth; that is, the Length and Breadth of *Greece*, or of the Earth. Referr'd to any individual Spot of the Earth, they often denoted Situation: thus the Longitude and Latitude of *Athens* or *Rome*, ſignified the Situation of thoſe Places in reſpect of the Heavens, or the Terreſtrial Circles; altho' thoſe Terms might alſo ſignify the Length and Breadth of thoſe Cities, applied in the common Senſe.

Hence it appears that the Reaſon for calling one ſort of Situation Latitude or Longitude rather than the other, was neither in imitation of the *Aſtronomers*, as ſome ſay (a); nor becauſe the Longitude being reckoned round the Globe, is more extended than the Latitude, which is reckon'd only from Pole to Pole, as others imagin (b). And it may reaſonably be preſumed, that if the Antients had known more of the Earth from North to South than from Weſt to Eaſt, they would have called the firſt the Longitude, and the latter the Latitude.

The *Greeks* in the Equivocal uſage of theſe Words were followed by the *Romans*, *Arabs*, and other *Orientals*, who cultivated their Learning; all which Nations have but one Word to expreſs both Senſes. The Modern *Europeans*, to prevent Confuſion, choſe rather to diſtinguiſh the Senſes by different Terms; Thus the *Engliſh* appropriate the Words *Latitude* and *Longitude* to denote Situation; and expreſs Extenſion by the Words *Length* and *Breadth*: excepting when their Authors, writing in the learned Languages, are obliged to uſe the *Greek* and *Latin* Words indifferently.

'Tis true, ſome of the more early Modern *Geographers* have applied Longitude and Latitude to the Earth in the Literal as well as *Geographical* Senſe: making Longitude the Extenſion of

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(a) Violer. Remarq. ſur. Geogra. verſ. Pref. (b) Chamer. Geogra. Pratiq. p. 27.

its Superficies from Eaſt to Weſt round the Globe; as they call the Diſtance from Pole to Pole its Latitude. But a late Author is miſtaken, when he ſays *Geographers* call Latitude the Space of Earth, which is betwixt North and South; and Longitude or Length, that Space of the Earth which is from Eaſt to Weſt (a); for theſe Terms are not uſed at preſent in that Senſe; and it would be better, as *Varenius* well obſerves (b), to expunge the Homonymies out of *Geography*, ſeeing they ſerve only to create Confuſion; beſides, the Earth being a Globe, in a ſtrict Senſe, can have neither Length nor Breadth.

Having premiſed thus much, let us conſider Latitude and Longitude more diſtinctly.

SECT. I.

Of the Latitude of Places.

Defin. LAtitude in *Geography* is the Receſs or Diſtance of a Place from the *Equator*; or it is the Situation of a Place according to its Parallel, whence the Parallels are called Parallels of Latitude.

The *Geographical* Latitude is the ſame with the *Aſtronomical* Declination, which is reckon'd from the Equinoctial, and differs from the *Aſtronomical* Latitude, which is reckon'd from the *Ecliptic*.

Latitude is reckon'd from the *Equator* towards either Pole.

Diſtinctions. Hence it is either Northern or Southern, according as the Place, whoſe Latitude is ſpoken of, is on this or that ſide of the Equator; thus *London* is in Northern Latitude, and the *Cape of good Hope* in Southern Latitude. Hence alſo it follows, that the nearer Places are to the Poles the greater the Latitude, and the nearer the Equator the leſs.

No Place can have more than ninety Degrees of Latitude; becauſe the Poles where they terminate, are at that Diſtance from the Equator. The Places ſituated under the Equator have no Latitude, becauſe Latitude is reckon'd from thence. Only two Places are capable of the greateſt Latitude, becauſe the Poles are but Points: whereas a great Number may have no Latitude, the Equator extending round the Globe.

Latitude of a Place is meaſured on the Meridian thereof, call'd alſo a Secondary of the Equator, and the Degrees of Latitude are all equal.

(a) Paſch. Geogr. Vol. 1. p. 5.

(b) Varen. Geogr. Gen. l. 2. c. 23.

Some of the moſt eminent Modern *Aſtronomers* have endeavour'd to prove that the Latitude is continually changing (a); and that the Degrees of Latitude gradually decreaſe (b) from the Equator to the Poles.

SECT. II.

Of the Longitude *of* Places.

Defin. Longitude, in *Geography*, is the Diſtance of a Place from the firſt Meridian: or it is the Situation of a Place according to its Meridian.

Diſtinction. As the Meridians incline, the nearer they approach the Poles, where they center; Places enjoying the ſame Longitude are not always Equidiſtant from the firſt Meridian, and Places Equidiſtant from the firſt Meridian have not always the ſame Longitude: but Places under the ſame Meridian have all the ſame Longitude, tho' not the ſame Diſtance from the firſt Meridian.

Longitude is reckon'd from the firſt Meridian towards the Eaſt or Weſt: whence a Place is either in Eaſtern Longitude, as *London*, or Weſtern Longitude, as *Bermudas*; ſuppoſing the firſt Meridian to be at *Ferro*, or any where between thoſe Places. Hence the farther Places are from the firſt Meridian the greater the Longitude, and the nearer the leſs.

No Place can have more than 180 Degrees of Longitude, becauſe the Circumference of the Globe being 360 Degrees, no Place can be removed from another above half that Diſtance: Altho' commonly foreign *Geographers* reckon Longitude quite round the Globe. Places ſituated under the firſt Meridian and the Poles have no Longitude, becauſe Longitude is reckon'd from the firſt Meridian, and all the Meridians terminate and are confounded in the Poles.

The Degrees of Longitude are not equal, but diminiſh in Proportion as the Meridians incline, or their Diſtance contracts in approaching the Poles. Hence in 60 Degrees of Latitude, a Degree or Minute of Longitude is but half the Quantity of a Degree or Minute on the Equator, and ſo of the reſt.

The Longitude therefore is beſt meaſured by the Angle, which the Meridian of the Place makes at the Pole with the firſt Meridian. Which Angle may be meaſured either on the Equator, the Parallel of the Place, or any other Circle Parallel to the Equator; becauſe all Arches of Circles contained under the ſame Angle are Similar, or conſiſt of the ſame Number of Degrees, tho' of different Quantities.

(a) See Variat. Pole. (b) See Meaſure of a Degree.

A TABLE Shewing the Quantity of the Degrees of Longitude in every Parallel of Latitude.

	Lat.	Min.	Sec.	Lat.	Min.	Sec.
Equator Parallel.	0	60	0	46	41	40
	1	59	56	47	41	0
	2	59	54	48	40	8
	3	59	52	49	39	20
	4	59	50	50	38	32
	5	59	46	51	37	44
	6	59	40	52	37	00
	7	59	37	53	36	08
	8	59	24	54	35	26
	9	59	10	55	34	24
	10	59	0	56	33	32
	11	58	52	57	32	40
	12	58	40	58	31	48
	13	58	28	59	31	0
	14	58	12	60	30	0
	15	58	0	61	29	4
	16	57	40	62	28	8
	17	57	20	63	27	12
	18	57	4	64	26	16
	19	56	44	65	25	20
	20	56	24	66	24	24
	21	56	0	67	23	28
	22	55	36	68	22	32
	23	55	12	69	21	32
	24	54	48	70	20	32
	25	54	24	71	19	32
	26	54	0	72	18	32
	27	53	28	73	17	32
	28	53	0	74	16	32
	29	52	28	75	15	32
	30	51	56	76	14	32
	31	51	24	77	13	32
	32	50	52	78	12	32
	33	50	20	79	11	28
	34	49	44	80	10	24
	35	49	8	81	9	20
	36	48	32	82	8	20
	37	47	56	83	7	20
	38	47	16	84	6	12
	39	46	36	85	5	12
	40	46	0	86	4	12
	41	45	16	87	3	12
	42	44	36	88	2	4
	43	43	52	89	1	4
	44	43	8	90	0	0
	45	42	24			

Here

Queries. Here it may not be amiſs to ſolve two Queſtions which may ariſe, Firſt, Whether 'tis beſt to reckon Longitude all one way, quite round the Globe, or to count it both Eaſtward and Weſtward of the firſt Meridian. Secondly, Why the Antients reckon'd Longitude from Weſt to Eaſt rather than from Eaſt to Weſt.

Anſwer to firſt. 1. *Marinus Tyrius* put the Eaſtern Parts of *Aſia* in the Longitude of 225 Degrees, and conſequently extended it Eaſtward beyond a Hemiſphere; but we cannot tell what Method the Antients would have followed in reckoning Longitude, had they known any Thing beyond the Weſtern Coaſts of *Africa*, and the Fortunate Iſles. And as it can hardly be ſuppoſed they would have placed the firſt Meridian in *America*, it may be preſumed they would have begun a reckoning Weſtward, from that of the Fortunate Iſlands: and perhaps one Motive of *Ptolomy*'s ſtopping juſt at 180 Degrees Eaſtward, tho' there was more Land beyond, was, becauſe he conceived it abſurd, to extend the reckoning beyond a Hemiſphere.

However that be, the Modern *European Geographers* are to blame, who after *America* was diſcover'd, continued to reckon Longitude round the Globe Eaſtward. *Des Chales* was aſtoniſhed that they had not even in his Time (1677) thought of diſtinguiſhing Degrees of Longitude into Eaſt and Weſt, like thoſe of Latitude into North and South: and recommends this Practice, as appearing from the Experience of Navigation the moſt eaſy and commodious (a).

'Tis true, before his Time *Antony Pigafetta* and *Antony de Herrera* reckon'd from the Meridian of *Toledo* both Eaſtward and Weſtward (b); and ſince then the *Engliſh*, and ſome particular foreign *Geographers* have followed his Advice: but his Countrymen the *French* have little regarded it, *De l'Iſle* himſelf, even in his late Maps for the Uſe of the *French* King, wherein many Things are corrected, as to the Form of Maps, as well as the Repreſentation, goes on the old Way of reckoning Longitude round the Globe.

But this Method is abſurd, and tends to breed Confuſion, becauſe (1.) it gives Places more than 180 Degrees of Longitude: which is the greateſt Diſtance they are capable of from the firſt Meridian, as before obſerved. (2.) It makes Places, to the Weſt of the firſt Meridian, appear the more remote the nearer they really are: and gives the ſame City both the greateſt and leaſt

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(a) Des Chales les Princip. Gener. de la Geogr. ap. Journ. des Scav. Tom. 6. pag. 256. (b) Vid. Ricciol. Geogr. Reform. l. 9. c. 2. p 400.

Degree of Longitude, ſuppoſing the firſt Meridian to paſs thro' the midſt of it. (3.) It makes the Longitude of a Place and the Diſtance between the Meridian of that Place and the firſt Meridian, to be different Meaſures; whereas they are exactly the ſame, as hath been already ſhewn. Thus all allow that the Meridian Diſtance between *Ferro*, and the Obſervatory of *Paris*, being found to be one Hour 20 Minutes in Time, or 20 Degrees: conſequently that is the Longitude of *Paris*, which lies ſo much to the Eaſt. And if you ask a *French Geographer* what is the Meridian Difference between *Ferro* and *Cayenne* in South *America*, he will Anſwer 33 Degrees, the latter lying ſo much to the Weſt of *Ferro*; and would laugh to hear any one ſay it was 327 Degrees, reckoning round about Eaſtward: tho' at the ſame Time he will tell you That is the Longitude of *Cayenne*; as if the Meridian Difference and the Longitude were the reverſe of each other.

According to this Notion of Longitude, theſe Abſurdities will follow; that two Places may be very near, and yet at a vaſt Diſtance at the ſame Time; and that one end of a City may be near 21600 *Geographical* Miles diſtant from the other. But reckoning Longitude both to the Eaſt and Weſt, all Difficulties of the kind will be removed, and the Meridian Difference agree with the Longitude.

Anſwer to Second.

As to the Second Queſtion, Why the Antients reckon'd Longitude from the Weſt rather than the Eaſt? Some imagin it was in Imitation of the *Aſtronomers* (a). But the natural Reaſon ſeems to be, becauſe they deemed it more proper to begin their reckoning from the Weſtern Bounds of the Continent, which were known to them, than from the Eaſtern Parts which they knew not. And for a like Reaſon the *Indians* placing the firſt Meridian in their own Continent, reckon Longitude from Eaſt to Weſt. The *Jeſuits* in *China* in effect do the ſame, reducing all their Obſervations in *Tartary*, and the neighbouring Countries to the Meridian of *Peking*, as that whoſe Diſtance is beſt known to them: reckoning Longitude therefrom both Eaſtward and Weſtward.

(a) Violer. ubi ſupr.

SECT. III.

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The Situation *of* Places *according to their* Meridians *and* Parallels *compared.*

Oppoſite Situations *of Places.*

PLACES may be put in Oppoſition Three Ways according to the *Terreſtrial Circles*, whence they may be diſtinguiſh'd into Three Sorts.

1. Thoſe which are ſituate on oppoſite Meridians and the ſame Parallel, ſo as to have the ſame Altitude of the Pole; but in oppoſite Parts of that Parallel, ſo as to differ in Longitude 180 Degrees.

2. Thoſe ſituated on the ſame Meridian but oppoſite Parallels, ſo as to have the ſame Longitude, and the ſame Latitude too; but on contrary ſides of the Equator, one to the North, the other to the South.

3. Thoſe which are on oppoſite Meridians and oppoſite Parallels as well as oppoſite Points of thoſe Parallels. Hence they differ 180 Degrees in Longitude, but have the ſame Latitude, tho' on contrary Sides of the Equator; and their Diſtance is never leſs than the whole Diameter of the Earth.

—Of Inhabitants.

Inſtead of Places, the *Geographers* put the Inhabitants of the Earth in Oppoſition, which they diſtinguiſh accordingly into *Periæci*, or rather *Periæki*: which ſignifies ſuch as dwell round about the Hemiſphere, and anſwer to the firſt ſort of Situation.

2. *Antæki*, ſignifying ſuch as dwell oppoſite to one another, and are in the Second Sort of Situation. Theſe are alſo called *Antomi*, as having their Shoulders oppoſite, becauſe they behold different Poles.

3. *Antipodes* or *Antichthones*, That is, People whoſe Feet are Diametrically oppoſite, or may be ſaid to ſtand on the Soles of one anothers Feet; as in the Third Situation. To theſe ſome add the *Synæki*, or thoſe who live either on the ſame Meridian or Parallel.

But the applying theſe Names to People is improper, and tends to breed Confuſion, ſince *Geography* has to do with the Earth, not the Inhabitants; for which Reaſon they had better ſtand to diſtinguiſh Places.

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CHAP. II.

The Uſe of the Terreſtrial Circles in exhibiting the Celeſtial Properties of Places.

Celeſtial Properties. PLACES are affected with a Diverſity of Day and Night, Heat and Cold, Seaſons of the Year, Riſing and Setting of the Stars, Shadows, and other *Celeſtial Phænomena*: in conſequence of the apparent Motion of the Heavens, according as they are ſituated in different Parts of the Earth, diſtinguiſhed by the Terreſtrial Circles.

Theſe *Phænomena* vary according to Seven different Situations of Places.

Places ſituated under the *Equator*. 1. Places at the Equator enjoy a Right Sphere, having the Poles in the Horizon. (1.) Hence the whole Heavens from Pole to Pole, and the Revolutions of all the Celeſtial Bodies, which Riſe and Set at Right Angles with the Horizon once in 24 Hours, will be viſible to them.

(2.) Their Days and Nights are equal throughout the Year, and all the Stars are 12 Hours above the Horizon and 12 below it.

(3.) They have two Summers and two Winters, *viz.* their Summers at the Time of the Equinoxes, when the Sun paſſes over them; and their Winters when the Sun is in the Solſtices at the Tropics.

(4.) They have four Sorts of Shadows; for it falls Weſtward at Sun-Riſe, Eaſtward at Sun-Set, Southward when *Sol* is in the Northern Signs, and Northward when he is in the Southern; but when the Sun is in the *Zenith* they have no Shadows at all.

(5.) Tho' theſe Places are in the Middle of the *Torrid Zone*, the Air is more temperate than at the Tropics, becauſe the Sun returning immediately from the Tropics, he continues longer about them than about the Equator.

——Between the Equator and Tropics. Places between the Equator and Tropics have the Sphere Oblique, one of the Poles being above the other below the Horizon. Hence

(1.) The Sun and Stars always Riſe and Set at

Oblique Angles with the Horizon; beſides, there are ſome which never Set, and others that never Riſe in their Horizon.

(2.) Their Days and Nights are of different Lengths, according to the different Declination of the Sun, excepting at the Time of the Equinoxes.

(3.) They have the ſame Number of Seaſons and Shadows as the Places under the Equator, and for the ſame Reaſon; the Temperature of the Air is alſo much the ſame.

At the Tropic.

(3.) Places at the Tropics, which bound the *Torrid* and *Temperate Zones*, having alſo an Oblique Sphere, have the Properties in much the ſame Proportion as the Places in the former Poſition; excepting that they have but one Summer and Winter, the Sun paſſing over their *Zenith* but once in the Year.

They have three Sorts of Shadows: for it falls to the Weſtward in the Morning, to the Eaſt at Night, and at Noon to the North, if at the Tropic of *Cancer*; and to the South, if at *Capricorn*; but when the Sun is at the Tropics they have no Shadow at all at Noon.

Between the Tropics and Polar Circles.

4. Places ſituated between the Tropic and Polar Circles are in the Temperate Zone, and have a more Oblique Sphere than the former; conſequently

(1.) A greater part of the Heavenly Bodies neither riſe nor ſet to them; and the Revolutions are more Oblique.

(2.) Their Days and Nights are more unequal.

(3). They have the ſame three ſorts of Shadows, but the Sun never is in their Zenith; becauſe he never paſſes beyond the Tropic.

(4.) They have four Seaſons in the Year.

(5.) The Air is much more temperate than in the *Torrid Zone*, becauſe the *Solar* Rays do not fall ſo direct; but as the Heat is leſs ſevere in Summer, the Cold is more intenſe in Winter. Theſe Properties encreaſe or diminiſh in proportion as the Places are nearer to or farther from the bounding Circles, but thoſe in the Middle are freeſt from the Extreams.

At the Polar Circles.

5. Places ſituate at the Polar Circles are at the End of the Temperate, and Beginning of the Frigid Zones. Their Sphere is ſtill more Oblique than the former, the Pole being more elevated above their Horizon than in any of the preceding Poſitions, and one of the Tropics above, the other below, their Horizon. Hence

(1.) Almoſt one half of the Heavens is continually viſible to them, and the other inviſible; the Riſing and Setting of the Stars at the Horizon being very Oblique.

(2.) They have one entire Day and Night of 24 Hours each at the *Solſtices*; all the other Days and Nights are more unequal than thoſe of the preceding Poſition, excepting the two Days of the Equinoxes.

(3.) They have the ſame Shadows as the Places in the foregoing Poſition: But having a Day of 24 Hours, when the Sun is at the Tropic, their Shadows turn round their Horizon.

(4.) They have four Seaſons of the Year alſo, as before.

(5.) The great Obliquity of the *Solar* Rays renders the Air very cold in theſe Places; for when the Sun is at the Tropic, that is, within their Horizon, its greateſt Meridian Altitude is 47 Degrees, and conſequently it never comes within 43 Degrees of their Zenith.

—Between the Polar Circles and Poles.

6. Places between the Polar Circles and Poles, that is, in the Frigid Zone, have ſtill a more Oblique Sphere than any other, becauſe it approaches nearer to a Parallel Sphere; for which Reaſon

(1.) Their Days and Nights are ſtill more unequal, and of greater Lengths; for in the Summer they have ſeveral Days without Nights, and in their Winter ſeveral Nights without Days; that is, they have Light and Darkneſs of ſeveral Days, Weeks, and even Months continuance.

(2.) Almoſt half the Heavens is above, and half below their Horizon.

(3.) Their Shadows turn round them during their longeſt Day, the Sun making his diurnal Revolution without Setting; but on other Days they have three Shadows, like thoſe in the fourth Poſition.

(4.) The Air is leſs cold in Summer in theſe Places than at the Polar Circles, becauſe the Sun continues longer above their Horizon; but in Winter the Cold is more intenſe, becauſe the Sun remains a great while below their Horizon.

—At the Poles.

7. Places at the Poles are in the Center of the Frigid Zones, and have a Parallel Sphere; whereof thoſe 2 Points only are capable. Hence

(1.) The Stars ſeen by them are always the ſame, making perpetual Revolutions round them; they never Set nor Riſe, are higher or lower; and the Planets during half their Periods will be above their Horizon, as *Saturn* 15 Years, *Jupiter* 6, *Mars* one, &c.

(2.) They have only one Day and one Night in the whole Year of ſix Months long each, the Sun being ſo many Months above, and ſo many below their Horizon, which is the Equator; but on the two Equinoctial Days, when the Sun is in the Points of *Aries* and *Libra*, he will be ſeen from both Poles at the ſame time; for his Center being then in their Horizon, one half of his Orb will be above, and the other half below it for 24 Hours together.

Neither are they in utter Darkneſs all the time of the Sun's Abſence, for the Twilight laſts till he is 18 Degrees below their Horizon, ſo that they are without the Twilight only from the 2d of *November* till the 18th of *January*; beſides, the Refraction of the Rays thro' the Atmoſphere makes the Sun appear above their Horizon ſeveral Days ſooner, and diſappear ſeveral Days later than otherwiſe he would do; alſo the Moon when ſhe is brighteſt, *viz*. from the firſt Quarter to the laſt, does not Set during the middle of Winter (a).

(3.) Their Shadows turn quite round them during the ſix Months that they are continually enlightened with the Sun.

(4.) They have but one Summer, which is very moderate, and one Winter, which is ſeverely cold.

We muſt obſerve with regard to Shadows, that they are generally diſtinguiſh'd into three Sorts; according to which, Places, or their Inhabitants are divided into, *Periskii*, ſignifying thoſe whoſe Shadows move round about them every Way; *Heteroskii*, ſuch as caſt their Shadows only on one ſide, either to the North or South; and *Amphiskii*, thoſe who caſt their Shadows on both ſides, one half of the Year towards the North, and the other half towards the South.

To theſe are commonly added their Oppoſites, the *Askians*, that is, thoſe who have no Shadows.

If we conſider the Phænomena according to the comparative Situation of Places, the *Periœki* have their Summer and Winter at the ſame time with one another, but Day and Night juſt at contrary times; the *Antœki* have Day and Night at the ſame time, but Summer and Winter at contrary times; and the *Antipodes* have alſo the ſame Seaſons, the ſame degree of Heat in Summer, and of Cold in Winter, and the ſame Length of Days and Nights; but as they are diametrically oppoſite, they have the ſame things at contrary times, and all things contrary at the ſame time, *viz*. their Feet, the Seaſons, Cold, Heat, Day, Night, Noon, and Midnight. (b)

BOOK

(a) Watts's firſt Prin. of Geogr. and Aſtron. Sect. 9. p. 58. (b) See Sanſon, Introd. a la Geogr. part 2. l. 2. c. 5. p. 141.

BOOK IV.

Geometrical GEOGRAPHY.

CHAP. I.

Of the Definition, End, History, and Object of Geometrical Geography.

Defin. Geometrical [*A*] Geography conſiders the Science, ſo far as it depends on Geometry, or the Things which it borrows from thence.

It is in ſome meaſure ſynonymous with *Geodeſia*, or *Surveying*, from which it differs only in the Application.

End *and* **Uſe.** The End of Geometrical Geography is, to deſcribe the Earth according to the Principles of Geometry.

Its Excellence conſiſts in delineating the Roads, Windings and Courſe of Rivers, Mountains, and all the minute Matters relating to

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[*A*] This Species is not in uſe with Geographers; but we employ it in order to introduce the Conſideration of thoſe Things belonging to Geometry, which otherwiſe muſt be omitted. Nor can we ſee any Reaſon why there ſhould not be a Geometrical as well as an Aſtronomical Species, eſpecially ſince Geometry is ſtill a neceſſary Principle of Geography, and propoſes Methods of exhibiting and aſcertaining the Situation of Places, as well as Aſtronomy, tho' not altogether in the ſame Perfection.

to Countries, which cannot be done by Aſtronomical Methods. Aſtronomical Geography reſts in Generals, the Geometrical deſcends to Particulars; the firſt is employ'd in ſketching the Out-Lines, and giving Proportion to the Repreſentation, the latter in filling up, ſhading and colouring, ſo to perfect the Likeneſs. Geometrical Geography therefore is no leſs uſeful in its kind than Aſtronomical; nor could the Science be completed without it. Beſides Obſervations themſelves are often verify'd and corrected, as well as the want of them ſupply'd, by Geometrical Geography.

Hiſt. Geometry gave the firſt Form to Geography, and moſt Nations had no other than a Geometrical Geography for many Ages after Aſtronomy was apply'd to that Science. For the Aſtronomical Methods being more difficult to put in Practice, Aſtronomical Geography did not thoroughly take place till theſe latter Times. The Geography of *Ptolomy* is almoſt wholly Geometrical, ſo far as relates to aſcertaining the Situation of Places; and ſome of the modern Geographers, particularly the *Sanſons*, &c. made uſe of Geometry for determining, and the Aſtronomical Methods for exhibiting, Situations; even the Aſtronomers themſelves of the Royal Academy of Sciences at *Paris*, who moſt ſtrenuouſly aſſerted the Excellence of Aſtronomical Obſervations for determining the Situation of Places remote from one another, yet had recourſe to Geometrical Methods, as moſt ſure and preciſe, for drawing the Meridian Line thro' *France*, after the Extremities thereof had been fixed by thoſe preſcribed by Aſtronomy. So that in Geographical Performances Geometry has all along gone hand in hand with Aſtronomy, which indeed has rendered the Geometrical Geography more perfect, but not leſs uſeful than it was before.

Geometrical Geography has been much improved of late Ages by the Invention of the Semi-circle, Compaſs, Quadrant, and other uſeful Inſtruments unknown to the Antients; whence the Operations of the Moderns are more ſure and preciſe.

Object. With regard to exhibiting and aſcertaining the Terreſtrial and Celeſtial Properties of Places, Geometry is concern'd ſolely about the former, and that ſort of Situation, which is call'd Relative or Mutual.

In the Mutual Situation of Places we conſider two Things, the extent of Earth, or Space interpoſed between them, which is called the Diſtance; and the Manner in which they lie, or decline more to the North or South, Eaſt or Weſt of one another, which is call'd Poſition or Bearing.

The Diſtance therefore may be defined and expreſſed by a Line drawn between two Places, whoſe Length is conformable to any known Meaſure.

The Poſition or Bearing may be termed the Direction of the Line of Diſtance; which on this account is alſo call'd the Line of Poſition.

To avoid ſwelling this Work too much, we ſhall wave defining the Geometrical Terms made uſe of in Geography, ſince they are to be found in every Book of Surveying, as well as in moſt Books that treat expreſly of General Geography, particularly *Chamereau's Geographie Pratique* (a), *P. Riccioli's Geographia Reformata* (b), *Varenius's Geographia Generalis,* (c) *&c.* Inſtead whereof we ſhall employ the reſt of this Book in treating of Meaſures and their Proportions.

CHAP. II.

Of Itinerary Meaſures, *their* Nature *and* Kinds.

Defin. BY Itinerary Meaſures, Geographers underſtand thoſe uſed by any Nation for meaſuring Land, or aſcertaining the Diſtances from one Place to another.

Variety *of Meaſures.* There is ſcarce a greater Variety in any Thing than this ſort of Meaſures: Not only thoſe of different Nations differ, as the *French* from the *Engliſh*, the *Italian* from the *French*, the *German* from the *Italian*, and ſo on; but thoſe of the ſame Country differ in different Provinces, and all commonly from the Standard. Thus the common *Engliſh* Mile differs from the Statute Mile; the *French* have three ſorts of Leagues. The *Italian* Miles differ in ſeveral States of *Italy*: So do the *Spaniſh*, *German*, *Turkiſh*, *Arabian*, *Chineſe*, *&c.* In ſhort, moſt Nations have Meaſures of the ſame Denominations of ſeveral Sizes, diſtinguiſh'd into common, and Standard or eſtabliſhed, greater, middle, and leſſer, or the like. Beſides, Meaſures being liable to change as well as other Things, thoſe which we find in a Country at one time are not the ſame which are in uſe at another time. For inſtance, there is a conſiderable Difference between the antient and modern Meaſures of the *Greeks*, *Egyptians*, *Perſians*, *Italians*, *French*, *&c.*

This

(a) Part c. p. (b) L. 5. c. 1. & Seqq. (c) part. 1. Sect. 1. c. 2.

Difficulty *of adjuſting them.*

This great Variation in Meaſures cauſes great Difficulties, which however might be overcome by Care, were thoſe of every Country well aſcertained; but not only Authors differ in their Reports of them [*A*], but the antient Monuments which remain exhibit different Dimenſions of the ſame ſort of Meaſures, whereof we ſhall give a remarkable Inſtance relating to the *Roman* Foot.

Suppoſing the *Paris* Foot to be divided into 720 Parts, according to *Picard*,

Roman Foot of the Capitol examined by *Picard* and *Auzout*, will be	653 or $653\frac{1}{2}$
—— Taken from the *Greek* Foot (which is 679) according to the Proportion of 24 to 25	652
—— According to *Greaves*, who makes the *Engliſh* Foot to the *Roman* as 1000 to 967	$653\frac{1}{3}$
—— Taken from the *Congius* by *Villalpandus*, according to *Riccioli*	$665\frac{8}{13}$
—— taken from the Monument of *Statilius*	$655\frac{1}{2}$
—— taken from the Vineyard *Mattei*	$657\frac{1}{2}$
—— taken from the Palm	$658\frac{1}{4}$
or nearly	659
—— taken from the Flags of the *Pantheon*, ſuppoſing them to be 10 *Roman* Feet	653

—— taken

[*A*] Mr *Caſſini* obſerves that *Picard* in his Meaſure of the Earth gives the Foot of *Bologna* in *Italy* ſomewhat leſs than the Truth, he makes it 1686, and *Caſſini* 1682 parts of the *Paris* Foot, ſuppoſing it to be divided into 1440 Parts: He alſo takes notice that the ſame Author has taken the Braſs or Braccio of *Florence*, conſiſting of 2580 Parts, uſed in meaſuring Cloth, for that of 2430 Parts uſed in meaſuring Land *.

Mr *Auzout* by examining the wideneſs of the Gate of the *Pantheon*, and the length of ÿ Braſs of *Florence*, concludes that ÿ *Engliſh* Foot *Greaves* made uſe of in meaſuring was leſs than the Standard, that is, contain'd only $1348\frac{4}{5}$ inſtead of 1351, which he affirms to be the true Proportion †.

Mr *Caſſini* the Father, is aſtoniſh'd at *Greaves* having found the Baſe of the greater Pyramid, meaſured by Triangles, as he relates in his *Pyramidographia*, 693 *London* Feet, that is, 650 *Paris* Feet; whereas all others agree to make it 680 or 682 *Paris* Feet. From hence, ſays that Author, one may ſee what a difference there is in Meaſures of the ſame Magnitude, when taken by different Perſons, and reduced to the ſame Foot §.

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* See Caſſini, de la grand. de la Terre p. 306. ap. Suite. Mem. de l'Acad. de Scienc. an. 1718. † See Auzout Meſur. anc. & mod. compar. ap. divers Ouvr. Math. & Phyſ. par Acad. Roy. Scien. & ap. le Clerc Bibl. Choiſie, Tom. 9. p. 216. § Caſſini, ubi ſupra, p. 190.

—— taken from a Fillet of Marble in the ſame Pavement, ſuppoſing it 3 Feet	650
—— taken from the Gates of the *Pantheon*, ſuppoſing them 20 Feet broad	661⅓
—— taken from the Pyramids of *Ceſtius*, ſuppoſing them 95 Feet	653½
—— taken from the Diameter of the Pillars of the Arch of *Septimius Severus*	653⅓
—— taken from the Fillet of Porphiry in the Pavement of the *Pantheon* (a)	653⅓

Remedy *propoſed.*

To remedy therefore theſe Inconveniences for the time to come, ſome have thought of eſtabliſhing a Meaſure taken from Nature itſelf, which therefore would be invariable and univerſal. *Thevenot* propoſed the Cells of the Honey Comb, which are of equal Dimenſions in all Countries, for the Baſis of ſuch a Meaſure. *Mouton*, Canon of *Lyons*, lays down a very plauſible Method, by means of a Pendulum (b); ſo does *Picard*. This Author obſerves, that a Pendulum vibrating a Second of Time, computed according to the mean Motion of the Sun, is 36 Inches, 8½ Lines of the Chaſtelet of *Paris* Meaſure: This might be called the Aſtronomical Radius; ⅓ of this Radius the univerſal Foot; the double of Radius the univerſal Toiſe or Fathom, which would be to the *Pariſian* Toiſe, as 881 to 864; the Quadruple might be called the univerſal Perch, which is equal to the Length of a Pendulum for two Seconds; in a word, the univerſal Mile might contain 1000 of thoſe Perches.

The Length of the Pendulum muſt be regulated by two great Pendulum Clocks, otherwiſe it will be difficult to attain the juſt Meaſure. The Author allows, that if it ſhould be found that the Pendulum will be of different Lengths in different Places (which indeed proves to be the Caſe) the Suppoſition of a univerſal Meaſure cannot hold: But ſays, that will not hinder but that in every Place there will be a perpetual and invariable Meaſure. (c)

Kinds *of Itinerary Meaſures.*

The Itinerary Meaſures uſed by moſt Nations antient and modern are of two Sorts; one is a Computation of the Diſtances by meaſuring the Earth, the other by Time; the firſt may be call'd

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* See Auzout, Meſur. anc. & mod. compar. ap. divers Ouvr. Math. & Phyſ. par Meſſ. de l' Acad. & ap. le Clerc Bibl. Choiſ. Tom. 9. p. 213.

(b) See Dict. de Trev. art. meſures, p. 359.

(c) See Picard's Meaſure of the Earth, p. 5. ap. Nat. Hiſt. of Animals by the Royal Academy of Paris.

Inſtrumental, the ſecond Horary. But before we treat of them, it may not be amiſs to give two Tables; one of ſome antient Meaſures, the other of the Foot and other leſſer Meaſures of different Nations compared with the *Engliſh*.

The firſt Table is taken from Dr. *Arbuthnot's* Tables of antient Coins; wherein with regard to the *Roman* Meaſures he follows *Greaves*, and takes the Proportion from the *Coſſutian* Foot at *Rome*.

I. TABLE *of Ancient Meaſures compared with the* Engliſh.

ENGLISH *Meaſures.*

	Inches.
INCH, 12 Lines	0
Palm, 3 Inches	3
Span, 3 Palm	9
Foot, 4 Palm	12
Cubit, 2 Span	18
Yard, 3 Feet	36
Pace, 5 Feet	60
Fathom, 6 Feet	72
Pole, $16\frac{1}{2}$ Feet	198
Furlong, 40 Pole, 132 Paces, 660 Feet	7920
Mile, 8 Furlongs, 1056 Paces, 5280 Feet, or	63360

GRECIAN *Meaſures.*

	Pac.	*Feet.*	*Inc. Dec.*
DActylus, Digit or Inch	0	0	0,7554$\frac{11}{16}$
Dôron or Dochme 4 Digits	0	0	3,0218$\frac{1}{2}$
Lichas, $2\frac{1}{2}$ Dôron or 10 Inches	0	0	7,5546$\frac{7}{8}$
Orthodoron, $1\frac{1}{10}$ Lichas or 11 Inches	0	0	8,3101$\frac{9}{16}$
Spithame, 12 Inches	0	0	9,0656$\frac{1}{4}$
Pous or Foot, 16 Inches	0	1	0,0875
Pygme, 18 Inches	0	1	1,5934$\frac{1}{8}$
Pygon, 20 Inches	0	1	3,109$\frac{1}{8}$
Pechys, 2 Feet	0	1	6,13125
Orgyia, 6 Feet	0	6	0,525
Stadios or Aulos, 100 Orgyia, or 600 Feet	100	4	4,5
Milion or Mile, 8 Stadia, 800 Orgyia, or 4800 Feet	805	5	0

ROMAN *Meaſures according to the* Coſſutian *Foot at* Rome.

	Pac.	Feet	Inc. Dec.
Digitus Tranſverſus or Inch	0	0	0,725$\frac{1}{4}$
Uncia	0	0	0,967
Palmus Minor	0	0	2,901
Pes or Foot [*Coſſutian*]	0	0	11,604
Palmipes	0	1	2,505
Cubitus	0	1	5,406
Gradus or Step	0	2	5,001
Paſſus or Pace [1000 in the Milliare]	0	4	10,002
Stadium [8 to the Milliare]	120	4	4,005
Milliare or Mile	967	0	0 0

SCRIPTURE *Meaſures.*

	Pac.	Feet.	Inc. Dec.
Digit or Inch	0	0	0,912
Palm	0	0	3,648
Span. The Eaſt uſed another Span equal to $\frac{1}{3}$ of a Cubit	0	0	10,944
Cubit,	0	1	9,888
Fathom	0	7	3,552
Ezekiel's Reed	0	10	11,328
Arabian Pole	0	14	7,104
Schoenus, meaſuring Line	0	145	11,004

The Longer SCRIPTURE *Meaſures.*

	Mil.	Pac.	Feet. Dec.
Cubit	0	0	1,824
Stadium	0	145	4,6
Sabbath-day's Journey	0	729	3,0
Eaſtern Mile	1	403	1,0
Paraſang	4	153	3,0
A Day's Journey	33	172	4,0

II. TABLE

II. TABLE *of the Foot and other leſſer Meaſures of Length, uſed by different Nations, compared together.*

The Foot of ſeveral Countries compared with the Roman *Foot taken from the Monument of* Coſſutius, *and the* Engliſh *Foot according to* Greaves (a).

	Foot. Roman.	*Foot.* Engliſh.
Roman Foot of the *Coſſutian* Monument	1000	967
—— of the Monument of *Statilius*	1005 $\frac{17}{100}$	972
—— of *Villalpandus* taken from the Congius of *Veſpaſian*	1019 $\frac{61}{100}$	986
Antient *Greek* Foot, which was to the *Roman* as 25 to 24	1041 $\frac{67}{100}$	1007 $\frac{29}{100}$
Paris Royal Foot	1104 $\frac{41}{100}$	1068
Engliſh Foot	1034 $\frac{11}{100}$	1000
Venetian Foot	1201 $\frac{61}{100}$	1162
Rhinland Foot according to *Snellius*	1068 $\frac{21}{100}$	1034

The Foot of divers Nations, reduced to the Paris *Foot, by* Picard. (b)

	Parts.
THE *Paris* Foot ſuppoſed to conſiſt of	720
Rhinland or *Leyden* Foot obſerved by *Picard* (b)	696
—— Perch containing 12 Foot	
London Foot	675 $\frac{1}{2}$
Daniſh Foot obſerved by *Picard*	701 $\frac{1}{10}$
—— Ell contains 2 Foot	
Dantzic Foot	636
Lyons Foot obſerved by *Auzout*	757 $\frac{\text{[illegible]}}{8}$
Boulogne Foot by *Auzout*	843
Swediſh Foot	658 $\frac{3}{4}$
Bruſſels Foot	609 $\frac{1}{3}$
Amſterdam Foot taken from that of *Leyden* by *Snellius*	629

An-

(a) Diſcourſe of the *Roman* Foot, p. 40. (b) Ouvrages de Math. et Phyſ. par Acad, Scienc. *Paris* 1693, p. 366 et ſeqq.

Another Reduction of foreign Feet taken from Greaves, Auzout, Picard *and* Eſenſchmid, *by Dr.* Arbuthnot. (a)

	Parts.	Inches.
NOremberg Foot equal to the Engliſh	1000	12
Paris Foot	1068	12,816
Venetian Foot	1162	13,944
Rhinland Foot	1033	12,396
Straſburg Foot	952	11,424
Dantzic Foot	944	11,328
Daniſh Foot	1042	12,504
Swediſh Foot	977¾	11,733
Bolognia Foot	1250	15
Geometrical Foot 5000 to a Minute taken from the *Engliſh* Feet in a Degree	1166	14,608

Other Meaſures of Length taken from Greaves, Auzout, Picard, *and* Eſenſchmid, *compared with the* Engliſh *Foot of* 1000 *Parts by Dr.* Arbuthnot. (b)

		Inch. Dec.
	1000 Parts	12
DErah [Dharâa] or Cubit of *Cairo*	1824	21,888
Perſian Ariſh	3197	38,364
Greater *Turkiſh* Pike or Foot	2200	26,4
Leſſer *Turkiſh* Pike	2131	25,572
Braccio [Fathom] at *Florence*	1913	22,956
——— for Woollen at *Siena*	1242	14,904
——— for Linen at *Siena*	1974	23,688
Canna [or Pole] at *Naples*	6880	82,56
Vera at *Almaria* and *Gibraltar*	2760	33,12
Palmo di Archtetti at *Rome*	732	8,784
Canna di Archtetti	7320	87,84
Palma di Braccio di Mercantia	695½	8,346
Genoa Palm	815	9,78
Antwerp Ell	2283	27,396
Amſterdam Ell	2268	27,216
Leyden Ell	2260	27,12
Paris Drapers Ell	3929	47,148
——— Mercers Ell	3937	47,244
Arſhin of *Ruſſia* according to *Bayer* (c)		28,80
——— of *Moſcow* according to *Crouch* (d)		25,650

(a) *Arbuthnot's* Tables of ant. Coins.

(b) Ibid.

(c) Vid. Comment. Acad. Scient. Petropol. Tom. 1. p. 428.

(d) View of *Brit.* Trade, Vol. 1. p. 96.

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CHAP. III.

Of *Inſtrumental* Meaſures.

THE Inſtrumental Meaſures may be diſtinguiſhed into thoſe uſed by the Antients, and thoſe uſed by the Moderns. Thoſe moſt commonly in uſe among the Antients, were the Stadium, the Mile, the League, the Paraſang, and the Schoenus.

The Stadium was peculiar to the *Greeks*, the Mile to the *Romans*, the League to the *Gauls*, the Paraſang to the *Perſians*, the Schoenus to the *Egyptians*, from whom the *Parthians* and other Nations borrowed it. (a)

The Itinerary Meaſures at preſent known to us, are Miles, Leagues, Wurſts, [Agâchi,] Farſengs, Koſſes and Gos, Li and Pu.

The Diſtances are expreſs'd by Miles in *Italy*, *Germany*, *Poland*, *Hungary* and the *Britiſh* Iſles; by Leagues in *France*, *Spain*, *Sweden* and *Switzerland*; by Wurſts in *Ruſſia*; Agâchi in *Turky*; the Farſangs are peculiar to *Perſia*; the Koſs and Gos to *Indoſtan*; the Li and Pu to *China*. (b)

Theſe Meaſures may be reduced to three Sorts in uſe with us, *viz.* Furlongs, Miles and Leagues.

The Stadium of the *Greeks* and *Romans* may be comprized under the Denomination of Furlongs; the Milion of the *Greeks*, Mille Paſſus of the *Romans*, *Ruſſian* Wurſt, *Arabian* Mîl, *Indian* Koſs, *Chineſe* Li, under that of Mile; and the *Turkiſh* Agâchi, *Perſian* Paraſang or Farſeng, *Egyptian* Schoenus, *Indian* Goſs, *Chineſe* Pu may be conſider'd as Leagues.

Meaſures compared with the Engliſh *according to the foregoing Accounts.*

Furlong or Stadium	*Feet.*	*Inc.*	*Dec.*
Antient *Grecian*	504	4	5
Antient *Roman*	604	4	5
Engliſh	660	0	0

(a) *Sanſon* Introd. a la Geogr. p. 89. (b) Ibid. p. 91.

Miles or Leagues of ſeveral Countries of Europe, *reduced into* Roman *Feet, by* Caſimir (a), *and from thence by us into* Engliſh *Feet.*

	Ro. *Feet.*	Eng. *Feet.*
THE Mile or League of *Italy* [old *Rom.*]	5,000	4,850
—— of *France* —— ——	15,750	15,277 $\frac{1}{308}$
England —— ——	5,454	5,290
Burgundy —— ——	18,000	17,460
Egypt —— ——	25,000	24,250
Flanders —— ——	20,000	19,400
Germany ſmall ——	20,000	19,400
—— middle ——	22,500	21,825
—— greater ——	25,000	24,250
Holland —— ——	24,000	23,280
Switzerland —— ——	26,666	25,866 $\frac{1}{20}$
Spain —— ——	21,270	20,631 $\frac{1}{900}$
Lithuania, called Mila	18,500	17,945
Poland, called Mila	19,850	19,354 $\frac{1}{300}$
Perſia, called Paraſang	18,750	16,587 $\frac{1}{300}$
Ruſſia [juſt $\frac{1}{5}$ of a Paraſang]	3,750	3,637 $\frac{1}{308}$
Scotland —— ——	6,000	5,820
Sweden —— ——	30,000	29,100

	Eng. *Feet.*
Mile common of *Italy*, according to *Engliſh* Miles in a Degree	6094
Antient *Roman*, or leſſer *Italian*	4835
Antient *Grecian*	4030
Engliſh	5280
Ruſſian Wurſt, (b) according to *Perry*	3504
—— according to *Bayer* (c)	3510
Arabian Mîl	6452 $5\frac{2}{3}$ *lines*
Chineſe Li (e)	2250

Miles of ſeveral Countries compared with the Engliſh *by Dr.* Halley. (d)

Miles	*Feet.*	*Yards.*	*Fur.*
Engliſh Statute Mile conſiſts of ——	5280	1760	8
German Mile better than 4 *Engliſh* ——			
Dutch Mile ſince *Snellius* about 3 ½ ——	——		
Italian Mile, leſſer or old *Roman*, about	4805		
Turkiſh Mile reputed equal to the *Italian*	4805		

Daniſh

(a) Vid. *Caſimir.* Pyrotech. ap. Dict. de Trev. Art. de Pied & Mile.
(b) *Perry*'s State of *Ruſſia* p. 3. (c) *Bayer* de Muro Caucaſ. ap. Comment. Acad. Scient. Petropol. Tom. 1. p. 428. (d) Hyde de Menſur.
(e) See *Bohun*'s Geogr. Dict. at the end of *Bernard*'s Preface.

Daniſh
Swediſh
Hungarian } Mile about a *German* Mile and ½, or at leaſt 5 or 6 *Engliſh*.

Poliſh Miles nearly equal to the *Dutch*.

Scotch and *Iriſh* Miles about ½ longer than the *Engliſh*, but are not defined by any certain Meaſure.

Ruſſian Vorſt [Wurſt] little more than ¾ of an *Engliſh* Mile.

Arabian Mile, both antient and modern, about an *Engliſh* Mile and a quarter.

Old *Roman* Mile nearly equal to the preſent *Italian* [leſſer Mile]

Leagues of ſeveral Countries compared with the English *according to the foregoing Computations.*

	Engl. *Feet.*
FRench League, great, 20 to a Degree	18282
——— 25 common	14625⅗
Perſian Paraſang or Farſeng	21888
Turkiſh Agâchi, the ſame	21888
Egyptian Schoenus	28980
Chineſe Pu 4 Miles 2 Furlongs and 60 Feet	23820

According to Dr. Halley's *Computation.* (a)

FRench League nearly 2 ¾ *Engliſh* Miles.

Perſian Paraſang, much about a *Spaniſh* League being 30 Stadia or 3 ¾ *Italian* Miles.

Egyptian Schoenus the greater of 60 Stadia equal to 7 ½ *Italian* Miles.

——— leſſer equal to 5 *Italian* Miles.

CHAP. IV.

Of Horary Itinerary Meaſures.

HOrary Meaſures are of two Sorts, the greater, or of a Day, and the leſſer, or of an Hour; which vary as they relate to Journeys by Land or Sea.

SECT.

(a) See *Bohun*'s Geogr. Dict. ubi ſupr.

SECT. I.

Of Horary Meaſures by Land.

THE Cuſtom of reckoning the Diſtances by Hours is received (a) as well in *Europe*, as in ſeveral Parts of the other 3 Quarters; and the more curious Travellers carry Watches, to compute the Rate they travel at, more exactly.

Generally a League or 3 Miles is allowed to an Hour; but theſe Horary Leagues are not always alike, for a Horſeman will travel farther in an Hour than a Footman; a Foot-traveller than a Karawân. The *French*, as *Brietius* ſays, reckon one of their Leagues to an Hour; but we cannot agree with him, that the *Engliſh* reckon two. (b)

The Day's Journey is a Meaſure or way of computing Diſtances every where uſed, eſpecially in *Arabia* (c), *Tartary*, moſt Parts of *Africa*, and ſeveral Countries of *America*; but as it is the moſt ſimple, ſo it is the moſt uncertain of all Meaſures.

The Day's Journey goes by various Names in different Countries, and at different Times; by *Iſidore* of *Charax*, it is called *Stathmus*, which denotes a Place where Travellers reſted at Night, and was commonly 20 Miles; the antient Gloſſary calls it *Statio*; *Pliny*, *Solinus*, *Apuleius* and others, *Manſio à manendo*; the middle-age Writers ſometimes name it *diæta*, *à die*, becauſe it put an end to the Journey of the Day (d); the Moderns uſually call it a Stage.

The *Arabs* call the Stage *al Marhalah*, and the *Perſians*, *Manzel*; which laſt Word ſignifies indifferently any Space of Ground travelled in a Day: For Journeys and Diſtances of Cities are meaſured by Stages, the Farſeng or Paraſang being left to the Geographer and the Curious. (e)

The Day's Journey may be diſtinguiſhed into. (1.) Ordinary, (2.) Extraordinary, and (3.) Military.

—Ordinary. (1) The ordinary Stage is that uſed by Travellers journeying at a moderate Rate; and is of various Lengths according to the Voiture and Rate of travelling.

Strabo, in his firſt Book, ſeems to hint that one Day's Journey is 333 *Greek* Stadia, or about 31 $\frac{1}{4}$ *Engliſh* Miles, or at leaſt 250 Stadia, or 23 $\frac{1}{4}$ Miles: But in his 7th Book, he makes one

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(a) *Sanſon* Introd. a la Geogr. p. 91. (b) Vid. *Brietius* Parallel. Antiq. & Nov. Geogr. (c) *Sanſon* ubi ſupr. (d) Notæ ad *Iſidor.* Charac. Manſiones Parth. p. 1. ap. *Hudſon* Geogr. vet. Græc. Vol. 2. (e) Kæmpf. Amœnit. Exotic. p. 727.

Day's Journey 310 Stadia, or about 29 ½ Miles. It is ſometimes reckoned 20 *Italian* Miles, as in the Civil Law, *de excuſatione tutelæ* (a). *Herodotus*, lib. 4. reckons the Stage 200 Stadia, or near 19 *Engliſh* Miles. *Polybius* and *Livy* lib. 5. computing a Journey thro' *Cilicia*, 150 Stadia, or 14 ¼ Miles. *Xenophon* 120 Stadia or near 11 ½ Miles, reckoning about 10 ½ Stadia to an *Engliſh* Mile. *Procopius* lib. Rer. Goth. reckons 100 Miles from *Ravenna* to the *Toſcan* Sea, to be 8 Days Journey to an expeditious Man, tho' it ſeems to require no great Expedition to travel 12 Miles and ½ a Day (b); if there be not ſome miſtake in the Copy.

The *Perſian* Manzels, or Stages, are not all of equal Length, but are meaſured according to the uncertain Diſtances of the Stations and Kârwânſerâ's, or Inns upon the Road, for lodging Travellers at Night, and are ſhorter or longer according to the manner of travelling: The Stage of a *Shâter*, or Foot-poſt, being ſhorter than that of a *Chapar*, and that of the ſlow Karawân leaſt of all; but *Kæmpfer* never obſerved it to be leſs than 4, or to exceed 8 Farſangs. (c)

Almarhalah, or Stage of the *Arabs*, is of ſeveral Sorts; the common Stage, according to *al Edriſi*, is 24 or 25 Miles: Beſides which he mentions light or eaſy Stages of 18 (d), and great Stations of 30 Miles each (e).

Abu'lfeda, who reckons it a varying and uncertain Meaſure, allows as a middle Number 8 Farſang, or Paraſangs, to the (f) Stage.

The *Tartars*, and thoſe of *Canada*, meaſure their Journeys by Days, which contain 15 *French* Leagues, or 13 where the Ways are bad (g).

Extraord. (2.) Extraordinary Stages, are thoſe performed by Couriers, Poſts or others, who for Expedition exceed by much the ordinary Rate of Travelling; and theſe differ according as the Journey is performed on Foot or Horſeback.

There are Inſtances of very long Day's Journeys; *Alexander*, to ſuppreſs the Rebellion of the *Arei*, travelled 600 Stadia in 2 Days, that is, each Day 72 Miles: But now becauſe of Baggage and Artillery, an Army can ſcarce march 10 Miles in a Day (h).

Julius Cæſar uſed to travel commonly 100 *Roman* Miles in a Day (i).

Curio travelled with *Cæſar*'s Letters 3300 Stadia in 3 Days, that is, 377 Miles *Engliſh* (k).

(a) *Arbuth.* ubi ſupr. p. 74. (b) *Briet.* ubi ſupr. (c) *Kæmpfer* Amœnit. Exotic. p. 727. (d) Vid. Geogr. Nub. Clim. 4. Part 8. p. 210. (e) Ibid. Clim. 5. Part 1. p. 217. (f) Vid. *Greaves*, Præf. Deſc. Chowarazm. p. 15. (g) Atlas Geogr. Introd. p. 12. (h) *Briet.* (i) *Sueton.* in Cæſare. (k) Appian. lib. 2. Bellor. Civil.

There are ſeveral long Day's Journeys mentioned by *Pliny* as Prodigies of quick Travelling: As of *Amitis* a *Lacedemonian* Runner; and *Philonides* one of *Alexander*'s, who run 1200 Stadia, from *Sicyon* to *Elis* in one Day, that is, 137 Miles (a).

Tiberius Nero travelled with 3 Chaiſes, in 1 Day and 1 Night, a Journey of 200 Miles, to ſee his Brother when he was ſick (b).

—**Military.**] (3.) The Military Journeys were properly thoſe which were called Stations and Manſions. It may not be amiſs to explain theſe Terms, about which Authors differ ſo much.

The Word, *Statio*, uſed by *Cæſar*, *Tacitus* and other good Writers, for the Duty of Soldiers or Others upon Guard, in the latter Times, was applyed to the Fort or Place itſelf, where they lodged (c). The *Manſiones* were the Summer Incampments made upon a March, which Name they took in the lower Empire, being originally called *Caſtra*. Theſe Manſions as well as Stations were generally at or near Towns, from whence they took their Names, as you ſee in *Antoninus*'s Itinerary; And thus, from theſe Military Journeys, the Names, Stations and Manſions, paſſed to Stages or Day's Journeys in general.

The Manſions among the *Romans* were not always of equal Length, as appears from *Antoninus*'s Itinerary; for Inſtance among thoſe from *Catina* to *Agrigentum*, one conſiſts of 24 Miles, two of 21, and two of no more than 12; but then, as *Voſſius* well obſerves, when a Journey was continued for ſeveral Days ſucceſſively, the Station was ſhorter than that of a ſingle Day's Journey (d), which ſometimes extended to 200 and even 300 Stadia (e).

Herodotus ſpeaking of the Manſions of the *Perſian* Monarchs, ſaith they travelled 150 Stadia a Day, that is about 17 Miles [*Engliſh*.] (f)

The *Perſians* give the name *Manzel* to the Station as well as to the Stage; it is a Place on the high Road, endowed with a publick Edifice called a *Kârwânſerâ*, provided with potable Water either by Nature or Art, and what elſe is proper for accommodating Travellers (g).

The *Romans* commonly reckoned the Military Stage 20 Miles but *Claudius Druſus Nero* computed it 33 (h).

(a) Plin. l. 7. c. 20. (b) Ibid. (c) See *Horſely* Britan. Rom. p. 100. (d) Iſ. Voſſ. de Magn. Rom. Vet. cap. 3. ap. Var. Obſervat. (e) Notæ ad. Iſid. Char. ubi ſupr. (f) *Arbuth.* ubi ſupr. p. 74. (g) *Kampfer* Amœnit. Exotic. p. 727. (h) *Briet.* ubi ſupr.

SECT. II.

Of Horary Meaſures by Sea.

THE Mariners have no other way of meaſuring the Diſtances at Sea but by Time; they eſtimate by the Log Line, how much way the Ship makes in a Minute, and thence compute the Quantity it runs in an Hour, or in a Day.

Mariners reckoned a *German* Mile for every Hour, but when the Wind was very briſk, they reckoned 60 *German* Leagues in a Day.

In the *Mediterranean*, they ſail 16 Miles an Hour, but no Ship can hold that Courſe long there without Danger (a); beſides theſe Miles muſt doubtleſs be underſtood of 75 or 82 to a Degree, by which the Mariners of the *Mediterranean* keep their Reckonings (b).

The Day's Sailing of a Ship aſſigned by *Herodotus* (c), is 700 Stadia, that is, 84 ½ *Engliſh* Miles, and for the Night 500 Stadia, or 70 ½ Miles, making in 24 Hours 155 *Engliſh* Miles; which ſeems too long (d).

Polybius, in *Strabo*, denies that in one Day they can ſail 2000 Stadia, or 240 Miles.

Ariſtides was of Opinion that with a fair Wind a Ship might ſail 1200 Stadia, or 144 Miles.

Marinus Tyrius, according to *Ptolomy*, computed they might ſail a 1000 Stadia, or 120 Miles a Day. *Strabo*, in a Day and a Night.

Scylax Caryandenſis compares the Voyage of a Day and a Night to a Journey of 3 Days, which he does not compute at above 108 Miles (e); both he and *Botthæus*, who wrote *Periplus's* of the outer Seas, computed the Diſtances by the Sailing of Ship in a Day and a Night (f). According to *Marcian Heracleota* Ships ſail in one Day 700 Stadia, [or 87 Miles 4 Stadia] ſometimes 900, [or 112 Miles 4 Stadia,] ſometimes 500, [or 62 Miles 4 Stadia,] according as they are built (g).

The *Curſus*, which is the greateſt Meaſure of Diſtances, is called by the *Arabs*, *al Majran*, and defined both by *al Edriſi* and *Abul'feda*, to be the Space which a Ship runs in a Day and a Night's Sail; which *al Edriſi* determines to be a 100 [*Arabian*] Miles (h).

(a) *Briet.* ubi ſupr. (b) Vid. *Voſſ.* de Emend. Longit: ap. lib. Var. Obſ. p. 144. (c) *Herod.* l. 4. (d) *Arbuth.* ubi. ſupr. p. 75. (e) *Briet.* ubi ſupr. (f) Vid. Marcian Heracl. p. 63. ap. *Hudſon* Geogr. Vet. Græc. Vol. 1. (g) Idem. ibid. p. 67. (h) *Greaves* Pref. ad Deſc. Chowarazm. p. 15.

CHAP. V.

Of Geometrical, or Geographical Meaſures.

THE Geometrical Meaſures are the Pace and the Mile. They are ſo denominated from their being employed in meaſuring the Earth: But on account of their uſe in Geography more than Geometry, may more properly be called Geographical Meaſures.

The Pace originally conſiſted of 5 *Roman* Feet, each Foot containing 12 Inches, each Inch 12 Lines, and every Line 12 Points.

The Geometrical Mile and *Roman* Mile were the ſame; the firſt Denomination being uſed by Geometricians and Geographers.

The Geographers adopted the Geometrical Mile on a Suppoſition that it anſwered to one Minute of a Degree, which in imitation of the Geometricians they divided into 60 Parts. This Suppoſition ſeems to have been grounded on the Experiment of *Poſidonius*, which gave 500 Stadia, each of 125 Foot, or 62 ½ *Roman* Miles to a Degree: But by late Experiments, this Meaſure has been found to be erroneous. Mr *Caſſini*, by examining the Diſtances between *Narbonne* and *Nimes* in *France*, and between *Bologna* and *Modena* in *Italy*, found that the antient *Roman* Mile was ⅕ Part leſs than the preſent greater Mile of *Italy*, and that inſtead of reckoning 60 to a Degree there ought to be reckoned 75 (a). This Remark is confirmed by *de l'Iſle*, who obſerves that reckoning 75 *Roman* Miles to a Degree, the antient Itineraries correſpond exactly with the celeſtial Obſervations (b).

A Geometrical, or rather Geographical Mile, therefore anſwers to a *Roman* Mile and one quarter, or contains 10 Stadia; ſo that 1000 Geographical Paces are equal to 1250 *Roman* Paces, or thereabouts.

Several Authors have given the Content of the common Miles, or Leagues of different Countries, in Geometrical Paces; but the preciſe Length of ſuch Meaſures and their Proportion to each other being little known, the Reductions hitherto made are not much to be relyed on.

(a) *Caſſini* Grand. de la Terre. ch. 14. ap. Suit. Mem. Acad. Ann. 1718.
(b) *de l'Iſle*, Juſtific. Meſur. Anc. ap. Mem. Acad. Roy. Scienc. Ann. 1714. Mem. p. 231.

The common Miles or Leagues of ſeveral Countries reduced to Geometrical Paces, by divers Authors (a).

	Geom. Paces.
THE common Mile of *Italy* contains	1000
The *Engliſh* Mile	1250
Scotch *Iriſh* } Mile	1500
German [greater] Mile	4000
Poliſh Mile	
Hungarian Mile	
Ancient *Gauliſh* League	1500
French League, common	2400
———— Leſſer	2000
———— Greater	3000
———— And ſometimes	3500
Swediſh *Daniſh* *Swiſs* } League	5000
Spaniſh League, about	3428
Ruſſian Wurſt	750
Perſian Paraſang	3000
Indian Koſs, about	2400 or 2500
—— Goſs, double the Koſs	
Chineſe Li	240
———— Pû	2400
Japan Itinerary Meaſure is of 2 Miles	
The Ordinary Station	20,000
The Stage, or common Day's Journey	30,000
The Horary League, or common Hour's Journey	3000

The Miles or Leagues, as given by Caſimir, (b) *reduced to Geometrical Paces.*

	Pac.	*Feet.*	*Dec.*
MILE or League of *Italy* [old *Roman*]	800		
French League	2520		
Engliſh Mile	872	3	$\frac{1}{200}$
Burgundy	2880		
Egypt	4000		
Flanders	3200		

Germany

(a) See *Sanſon* Introd. a la Geogr. *Ozanam* Dict. Math. p. 335. Chamereau Geogr. Pratiq. (b) Vid. *Caſim.* Pyrotechn. ap. Dict. de Trev. Art Pied & Mile.

	Pac.	Feet.	Dec.
Germany ſmall	3200		
—— middle	3600		
—— greater	4000		
Holland	3840		
Switzerland	4266	2	$\frac{1}{800}$
Spain	4303	1	
Lithuania, called Mila	2960		
Poland, called Mila	3176		
Perſia, called Paraſang	3000		
Ruſſia	600		
Scotland	966		
Sweden	4800		

The following Meaſures, deduced from the Itinerary kinds already exhibited, may be eſteemed more exact.

	Geom. Pac.	Feet.	In.	Lin.
THE common Miles of *Italy*	1000			
Old *Roman*, or leſſer Mile of *Italy*	800			
Engliſh	866	2	6	8
Old *Grecian*	575	0	11	11
Ruſſian Wurſt (according to *Bayer*)				
Arabian Mîl	1058	$\frac{112}{1000}$	$\frac{2}{3}$	
Chineſe Li	369	0	1	$2\frac{26}{41}$

CHAP. VI.

Of Aſtronomical Meaſures.

Definit.] BY an Aſtronomical Meaſure we underſtand a Meaſure adequate to a Degree of the Earth; or an Itinerary Meaſure proportionable to the Meaſure of a Great Circle, or a Part thereof, determined by means of Aſtronomical Obſervations.

Uſe.] How well ſoever the Meaſures of different Countries may be determined in themſelves, or with reſpect to each other, they can be of no great Service to the Geographer in adjuſting the Situation of Places, unleſs the Proportion which ſuch Meaſures bear to the Circumference of the Earth be known to him. For if he aſcribes more *Engliſh* Miles, for inſtance, to a Terreſtrial Degree than it really contains, he will make the Magnitude of the Earth ſo much greater than the Truth, and if he gives too few he will leſſen it in proportion; in the firſt Caſe Countries will be extended every way too much, and in the latter contracted; hence Geography becomes erroneous, and Navigation is rendred unſafe.

Nothing therefore is of more importance to Geography than to know the Magnitude of the Earth; and before the Aſtronomers gave that Science their aſſiſtance, nothing appeared ſo difficult to attain. For the Methods preſcribed by Geometry requireing the actual Meaſure of the whole, are therefore impracticable and inſufficient: For who could pretend to meaſure the vaſt extended Continents, the Surface whereof is cover'd with an infinite Number of Mountains, which render it unequal, and croſſed every where with Rivers, Lakes and Seas, which ſurround it on all Sides? So that *Pliny* admired the daring Spirit of Men, who durſt attempt things ſo difficult: Nor could they ever have ſucceeded in the Undertaking, if they had not eſſayed to determine the Circumference of the whole Earth by the Meaſure of one of its Parts (a).

The Application of the Circles of the Sphere to Geography afforded means for effecting this; for every Circle being divided into 360 Degrees, if the Quantity of one Degree be known, the Quantity contained in all is conſequently known. So that the Limits of a Degree on any Great Circle, particularly a Meridian, being found, and the Diſtance exactly determined in any known Meaſure, that multiplyed by 360 gives the Circumference of the Earth in ſuch Meaſure.

The Limits of a Degree on a Great Circle of the Earth are known by the Vertical Points in the Heavens correſponding thereto: And a Degree of the Meridian is fitteſt for the Purpoſe, becauſe the Vertical Points are determined much more eaſily and preciſely from North to South than from Eaſt to Weſt.

Hence for determining the Quantity of a Terreſtrial Degree 3 things are requiſite to be known; (1.) The Meridian Line extended for a conſiderable Space; (2.) The Latitude of any 2 Places on the Meridian Line, whoſe Diſtance ſhall be one Degree at leaſt; (3.) The Diſtance between thoſe 2 Places in the Standard Itinerary Meaſure of any Country.

Several Experiments have been made both by the Antients and

(a) *Caſſini le fils*, de la Grandeur & Fig. de la Terre, ap. Suite des Mem. Acad. Science. Ann. 1718. p. 14.

Moderns to ſolve this important Problem, which hath not been effected till the laſt Century: For the Determinations of the Antients were uncertain and inaccurate, they having always aſſumed the Meridian Line, and ſometimes the Diſtance, without aſcertaining them. The Methods made uſe of in the ſeveral Attempts we reſerve for another Place; the Reſults we ſhall give here, with the Itinerary Meaſures reduced to them.

The Magnitude of the Earth, and Quantity of a Degree, according to ſeveral Experiments.

	Degree.	*Circum.*
Mathematicians in *Ariſtotle's* time in Stadia	$1111\frac{1}{9}$	400,000 Stad.
Eratoſthenes's firſt Dimenſion	$694\frac{1}{2}$	250,000 Stad.
—— laſt Dimenſion received by *Hipparchus*	700	252,000 Stad.
—— reduced to *Roman* Miles of 8 Stadia by *Pliny* and *Vitruvius*	$87\frac{1}{2}$	31,500 Miles
Poſidonius's firſt Dimenſion		240,000
—— laſt Dimenſion, received by *Marinus Tyrius,* and *Ptolomy*		180,000
—— In *Arabian* Miles	$66\frac{2}{3}$	
Arabians, in *Arabian* Miles	$56\frac{2}{3}$	
—— reduced to old *Roman* Miles, ſuppoſing *Ptolomy* uſed the *Greek* Stadium	$53\frac{1}{8}$	
—— if the *Alexandrian*	$61\frac{1}{2}$	
Fernelius, Paris Toiſes	56,746	
—— *Engliſh* Miles		
Snellius, Rhinland Toiſes	57,020	
—— middle Meaſure	57,000	
—— reduced to *Paris* Toiſes	55,021	
—— to *Engliſh* Miles		
Norwood, Engliſh Feet	367,200	
Engliſh Miles almoſt	$69\frac{1}{2}$	
Riccioli, Paris Toiſes	62,650	
Picard, Paris Toiſes	57,060	
French Leagues	$28\frac{1}{2}$	Toiſe 60
Engliſh Miles	$69\frac{1}{4}$	
Academy of *Paris,* Toiſes	57,061	

Of theſe Reſults, we ſhall employ that of *Picard:* Which having been verified by the new Experiment of the Royal Academy of *Paris,* we prefer to the Determination of our Countryman *Norwood;* who is much to be admired for having in a Matter of ſo much Nicety come ſo near the Truth, by a Method not ſo accurate as that made uſe of by the *French.*

	Miles	
MILES Geometrical in a Degree	60	
—— Common or greater *Italian*	60	
—— Antient *Roman,* or leſſer *Italian,* according to the Coſſutian Foot.	75	5 Stad. almoſt.
according to *Caſſini* and *de l'Iſle*	75	
—— Antient *Grecian*	90	5 $\frac{2}{3}$ Stad. almoſt
—— *Engliſh* Miles [of 365640 Feet]	69 $\frac{1}{4}$	
—— *Ruſſian* Wurſts of 3504 Feet (each, according to *Perry*)	104 $\frac{1}{3}$ & 56 *Eng.* Feet	
—— *Chineſe Li,* of 360 *Pu,* or Paces, (according to *Hyde*)	162 $\frac{1}{2}$ & 15 *Eng.* Feet	
—— *Pu,* or 10 *Li,* according to *Hyde*		
Arabian Miles	56 $\frac{2}{3}$	

Miles and Leagues in a Degree, according to Dr. Halley.

MARINE Leagues	20
French Leagues	25
German Miles reckon'd	15
Dutch Miles, by *Snellius*'s Experiment, neareſt	19
Italian Miles, the *Roman* Foot being $\frac{2}{5}$ of an Inch leſs than the *London* Foot, or as 29 to 30	76
Old *Roman,* equal to the preſent [leſſer] *Italian* Miles	76
Turkiſh Miles, reputed equal to the *Italian*	76
Poliſh Miles, reckon'd about	20
Spaniſh Leagues [that is Marine Leagues conſtantly (a)] reckon'd	17 $\frac{1}{2}$
—— Common Leagues, according to *Hurtado* and *de l'Iſle*	20
—— Of *Catalonia,* according to *de l'Iſle* (b)	19

(a) See *Bohun*'s Geogr. Dict. at the end of *Bernard*'s Pref. (b) *De l'Iſle*, Lett. ſur ſa Carte *d'Eſpagne*, ap. Mem. *de Trev. Jul.* 1701. p. 224 et ſeq.

The following Meaſures, (a) *tho' commonly given by Authors, are n*
ſo much to be depended on.

ENGLISH Miles in a Degree	48
—— *Italian* and *Turkiſh* com. Miles, (*Gordon*)	60
Scotch Miles *Iriſh* Miles	40
Dutch Miles, (*Gordon*)	15
German Miles	15
Poliſh Miles	20
—— Great *Poland* Miles, (*Gordon*)	15
Hungarian Miles	10
French Leagues, Common	25
—— Small	30
—— Great	20
Swediſh Leagues	12
Daniſh Leagues	12
—— Miles	15
Swiſs Leagues	12
Spaniſh Leagues	17 ½
Ruſſian Wurſts, [or Verſts, *Gordon*]	80
Perſian Paraſangs, (*Ozanam*)	30
—— (*Sanſon, Gordon*)	20
Indian Koſs	24 or 25
—— Gos	12 or 12 ½
Chineſe Li	250
—— Pû	25
Japan Itinerary Meaſures	20
—— Inks, (*Gordon*)	400
Stations	3
Stages, or Day's Journeys	2
Hour's Travelling	20

PART

(a) See *Sanſon*'s Introd. a la Geogr. *Ozanam*, Dict. *Math.* p. 335, *Chamereau*, Geog. Pratiq. *Gordon*, Geogr. Gram. p. 8.

PART III.

CONTAINING

Hiſtorical GEOGRAPHY.

OF

Hiſtorical GEOGRAPHY,

And its Analyſis.

Defin. HISTORICAL Geography comprizes the Matters which Geography takes from Hiſtory.

Diſtinct.] By Hiſtory here is meant all Books in general that give an Account of Places, or are capable of furniſhing a *Notitia* of Countries in whole or in part: Particularly thoſe of Voyages and Travels, Chorographical and Topographical Deſcriptions; the Ephemerides, or other Tracts, containing the Obſervations of Aſtronomers as to the Longitude and Latitude of Places: And, by the Matters collected from them, we underſtand, not the Things that concern the Government, Soil, or Inhabitants of Countries, but thoſe that are purely Geographical, or relate to their Situation, Origin, State and Names.

End and **Diviſion.**] The End of Hiſtorical Geography is to exhibit the Surface of the Earth, according to its ſeveral Parts and Diviſions: And, as thoſe Parts and Diviſions may be conſider'd, either as they are in themſelves, or with reſpect to other things, hence the Species of Hiſtorical Geography may be diſtinguiſhed into Abſolute, Relative, and Comparative.

1. The Abſolute Species, conſidered with reſpect to the Parts of the Earth exhibited, may be diſtinguiſhed into Natural and Political. Political Geography, in reſpect to the different kinds of Juriſdictions, Temporal and Spiritual, may be divided into Civil and Eccleſiaſtical.

2. The Relative Species of Hiſtorical Geography, conſidered with reſpect to other Things, may be diſtinguiſhed as they relate to different Nations and Times; hence Relative Geography may be divided into National and Periodical.

National Geography may be ſubdivided into *Engliſh*, *French*, *Turkiſh*, *Chineſe*, or as many Species as there are Nations who cultivate Geography.

Periodical Geography may be ſubdivided into as many Species as there are Variations from time to time in the Geography of Nations, occaſioned by the Change in the Diviſions, Names, *&c.* of Countries and Places: But for eaſe ſake they are commonly reduced to three, namely, Ancient, Middle, and Modern.

3. The Comparative Species may be diſtinguiſhed, as they relate to connecting the Geography of different Nations and Times, or ſhewing their Imperfections; hence Comparative Geography may be divided into Parallel and Critical.

Analytical Table of Hiſtorical Geography.

Hiſtorical or Notitiary Geography.

- 1. Abſolute Species
  - 1. Natural; treating of,
    - 1. Continents, Iſlands, Peninſulas, Iſthmus's.
    - 2. Mountains, Plains, Deſarts, Woods.
  - 2. Political.
    - 1. Civil.
      - 1. Empires, Kingdoms, States, Provinces.
      - 2. Cities, Towns, Caſtles, Villages.
    - 2. Eccleſiaſtical.

      1. Patriarchates, Primacies, Archbiſhopricks, *&c.*
      2. Biſhopricks, Deanaries, &c.

2. Relative Species
   1. National.
      1. *Engliſh, French, German.*
      2. *Turkiſh, Perſian, Chineſe.*
   2. Periodical.
      1. Ancient,
      2. Middle,
      3. Modern.
3. Comparative Species
   1. Parallel.
   2. Critical.

BOOK I.

Of *Natural* GEOGRAPHY.

CHAP. I.

The Nature, End, &c. of Natural GEOGRAPHY, *and Analyſis of the Land.*

Defin. N*ATURAL Geography* conſiders the Surface of the Earth, according to its Natural State, or the Form wherein it was Created.

Diff.] It differs from *Phyſical Geography*, which conſiders the Earth as an Element, according to Dr. *Woodward*, who wrote a Treatiſe under that Title.

End and **Uſe.**] The End of *Natural Geography* is, to exhibit the Surface of the Earth, as divided into Continents, Iſlands, &c. and diſtinguiſhed into Mountains, Valleys, Plains, Deſarts, Coaſts, &c. excluſive of Kingdoms, States, Cities, Buildings, and other Works of Men.

This Species is particularly uſeful to Military Men, who ought to be acquainted with the Natural Situation of Countries. It is alſo of more Importance to Geography to have the Situation of the Natural Parts of the Earth determined, than the Political: Becauſe being more fixt and permanent, the Situations, of Cities, and other Parts ſubject to daily Alterations, might be ſo well aſcertained, in reſpect of them, by Bearing and Diſtance only; that in caſe of their changing Names, or being deſtroyed, the Places where they ſtood might be eaſily found: Whereby Geography would be freed from the Inconvenience it ſuffers at preſent, on thoſe Accounts.

Hiſt.] Natural Geography has all along been cultivated in conjunction with Political, and not apart. Which happens, not only becauſe the Works of Men and Nature are mixt together every where, but indeed the Roads or Ways of Communication being made between Cities, and not along Rivers, Mountains, Deſarts, &c, unleſs they happen to lie in the Way, 'tis difficult to trace them. Hence it is that in Deſcriptions made from the Relations of Travellers, many of thoſe Parts are oftentimes omitted, confounded with one another, or wrong-placed; and even in Surveys, their Situations are rarely exhibited with a due degree of Accuracy.

Indeed the Hydrographers have treated of Natural Geography ſeparately, and with tolerable Care, ſo far as relates to the Sea-Coaſts, for the Benefit of Navigation; and it could be wiſh'd that the Geographers would cultivate this Species with the ſame Zeal for the Benefit of Geography. They ſhould not only treat the *Natural Geography* apart from the *Political* in their Syſtems, as *Reland* has done, both by Maps and Diſcourſe in his *Palæſtina Illuſtrata*, but alſo give particular Syſtems thereof, after the manner of *Coulon* and *Papyrius Maſſon*, in their Books of the Rivers of *France*.

Object.] The Earth, as the Object of Natural Geography, is diſtinguiſhed into divers kinds of Parts, which are denominated from their Figure, or other Natural Properties, according to the following Table.

Analyſis of the Surface of the Earth, or Diviſion into its ſeveral Species.

The Earth, or Dry Land, conſiſting of
- 1. Abſolute Parts,
  - 1. Continents, Firm or Main Land.
    - 1. Peninſulas.
    - 2. Iſthmus's.
  - 2. Iſlands.
- 2. Relative Parts, diſtinguiſhed into
  - 1. Mediterranean, or Inland, conſidered as to
    - 1. Figure of the Surface.

MVSEVM BRITANNICVM

    1. Level or Flat Lands.
      1. Champains.
      2. Plains.
    2. Elevated or High-land.
      1. Mountains, Hills.
      2. Mounts, Hillocks.
      3. Rocks.
    3. Sunk or Low-lands.
      1. Valleys, Bottoms.
      2. Streights or Paſſes.
  2. Quality of the Soil.
    1. Fertile or Productive.
      1. Wood-Land.
        1. Foreſts, Woods.
        2. Groves, Parks.
      2. Paſture-Land.
        1. Cultivated. Meadows, Fields.
        2. Uncultivated.
          1. Wilderneſſes, or Wilds.
          2. Commons.
    2. Barren.
      1. Deſarts.
        1. Sandy.
        2. Stoney.
2. Maritime, or Out-land, diſtinguiſhed into
  1. Coaſts, or Shores conſidered with reſpect to
    1. The Edge or Border.
      1. Straight.
      2. Winding, whence proceed
        1. Promontories or Capes.
        2. Points.
    2. The Surface.
      1. Flat or Low.
      2. High or Steep.
      3. Downs or Sand Hills.
  2. Strand interſperſed with
    1. Rocks.
    2. Sandbanks and Shelves.

Of

FH MUSEUM BRITANNICUM

CHAP. II.

Of the Abſolute Species of Land, and Explication of the Terms.

Land.] THE Land is that Part of the Earth which appears out of the Water, on the Surface of the Globe; whence it is called the dry Land, to diſtinguiſh it from that Part which is covered with Water.

Diviſion.] The dry Land conſiſts either of Abſolute or Relative Parts.

Abſolute parts.] By Abſolute Parts we mean thoſe larger Portions into which it is diviſible. Theſe Portions are determined by the Intervention of Water, by which they are either quite or very nearly divided from one another. The Parts which are quite divided by the Water are very numerous, and of different Magnitudes; the largeſt are called Continents, the leſſer Iſlands.

Contin.] A Continent is a very large quantity of the dry Land; ſo called by the *Latins*, becauſe it conſiſted of one continued Piece, and contained many Countries, like that which includes *Europe*, *Aſia*, and *Africa*; hence it is alſo called the Firm and Main Land. The *Greeks* call'd it Ἤπειρος, from ἄπειρος, as much as to ſay Infinite, (a) ſuppoſing the Earth to be infinitely extended; and before the Diſcovery of *America*, our Continent was by the Vulgar commonly call'd the World, imagining there was no Land beſides.

Iſland] An Iſland is a leſſer Space of Land, ſurrounded by the Water, differing from the Continent only as to Magnitude; it is in this Senſe that it ſtands oppoſed to Continent, which in effect is no other than an Iſland of a larger Size.

With reſpect to Magnitude and Situation, Iſlands may be diſtinguiſhed into ſeveral Sorts.

1. Some are very large, as *Iceland*, *Great Britain* and *Ireland*, *Ceylon*, *Borneo*, *Sumatra*, *Java*, *Japan*, *Madagaſcar*, *New-Found-Land*, *Cuba*, St. *Domingo*, *Terra del Fuego*.

2. Others middling, among which may be reckoned *Gothland* in the *Baltic Sea*, *Sicily*, *Candia*, *Cyprus*, in the *Mediterranean*, *Hay-nan* to the South of *China*, and the like.

3. Others ſmall, as the Iſle of *Man*, Iſle of *Wight*, *Majorca*, *Minorca*, *Ivica*, *Malta*, *Ormus*, and innumerable others.

With reſpect to Situation, (1) ſome are ſcattered thro' the Ocean,

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(a) Agathem. de Geogr. l. 1. c. 1.

Ocean, at a great diſtance from the Continent, and from one another, as the Iſle of *Aſcenſion*, St. *Helena*, *Triſtan de Cugna*, *ges Romeiras*, &c.

(2) Others lie in great Numbers near one another: of which ſome range themſelves in Length thro' a vaſt extent of Sea, either ſingly at ſome diſtance, as the Iſles of *Gany* and *Mary Ann*, in the Eaſtern Ocean; thoſe of *Amirante* in the *Indian* Ocean: or elſe in thick cluſters of very ſmall Iſlands; as the *Maldives* in the *Indian* Ocean, and the leſſer *Antilles* in the Gulf of *Mexico*. Others lie in cluſters, and are either more ſcattered, like the Iſles of the *Indian* Sea, to the North Eaſt of *Madagaſcar*: or elſe lying pretty cloſe together, as the Iſles of *Ferro*, *Shetland*, about *Scotland*; thoſe of the *Archipelago*, the *Philippine* Iſlands, Old and New, in the *Indian* Ocean; the *Azores*, *Canaries*, *Cape Verde* Iſlands; the *Galapes* and Marquis's of *Mendoza* in the South Sea.

Sometimes Iſlands are made partly by the Sea, and partly by Rivers and other Waters ſeparating one part of the Continent from another: as the *Delta* of *Egypt* by the *Nile* dividing into two great Branches; the Iſlands at the Mouths of *Tigris* and *Ganges*. Thus alſo by a Communication between the River *Miſſiſipi* and the Lakes of North *America*, all that large Country compriſing the *Engliſh* Dominions in the Continent of *Florida*, becomes an Iſland. So does moſt part of the *Netherlands*, by the Communication between the *Rhine* and the *Rhone*; and even almoſt all *Europe* by the Communication made between the *Wolga* and the Lake of *Onega*.

Both Continents and Iſlands are in many Places embraced ſo ſtraitly by the Water, that the Parts are very near being ſeparated aſunder; whereof the latter is called a Peninſula, and the Slip which keeps them together an Iſthmus.

Peninſ.] A *Peninſula* or Peniſle, called by the *Greeks* *Cherſoneſus*, is a Portion of Land which being ſurrounded by the Sea, excepting in one Part where it is join'd to the reſt, becomes almoſt an Iſland, as the Word imports; ſuch as *Spain*, *Italy*, *Jutland*, the *Morea*, little *Tartary*: and indeed *Africa* is but a large Peninſula joining to *Aſia*, and North and South *America* two large ones linked together.

Should Rivers be admitted as forming Peninſulas, moſt Countries would be divided into Peninſulas: We ſhould find many in *Spain*, *France*, *Great Britain* and *Ireland*. *Turky* would become one by the *Danube* paſſing near the Gulf of *Venice*; and South *America*, which is a Peninſula itſelf, would be divided into two or three leſſer ones.

Iſthmus.] An Iſthmus (a *Latin* Word taken from the *Greeks,*) is a narrow Neck of Land, between two Seas, joining the Peninſula to the Continent or Iſland.

Iſthmus's are of different Sizes: Some very broad, as thoſe which join *Spain* to *France, Italy* to *Germany, Jutland* to *Holſtein*; others very narrow, as that of *Corinth*, which faſtens the *Morea* to *Greece*, that of *Precop*, which joins the *Krim* to the reſt of little *Tartary*. That of *Malacca* is pretty narrow; and conſidering the Magnitude of the Peninſulas to which they belong, the Iſthmus of *Swez*, which faſtens *Africa* to *Aſia*, and that of *Panama* or *Darien*, which joins the North and South *America* together, may be reckoned ſmall ones; but the Peninſulas of *Arabia*, and the *Indias* without and within *Ganges*, may be Peninſulas without Iſthmus's, ſince the Parts in which they are contiguous to the Continent are as broad as the Peninſulas themſelves are long.

CHAP. III.

Of the Relative *Species of* Land, *and Explication of the* Terms.

Relative Species. BY the Relative parts of the Land, we underſtand thoſe which are diverſifyed, either by Situation, or certain Alterations of the Surface.

In point of Situation, the Land may be divided into *Mediterranean* and *Maritime*.

SECT. I.

Of Mediterranean Lands.

Medit. Lands. MEditerranean Land comprehends thoſe Parts poſſeſſing the Middle Parts of Continents or Iſlands; whence we ſay the Midland, and the Inland Countries of *Europe*, the Inland Parts of *Great Britain*, to diſtinguiſh them from the Maritime Countries, or Parts lying near the Sea.

The *Mediterranean* Lands may be conſidered, either according to the different Figure of the Surface, or Quality of the Soil.

I. According to the Figure of the Surface, they may be diſtinguiſhed into (1) Level or Flat, (2) Elevated, (3) Sunk or Hollowed.

1. Level or Flat Lands are called Champains and Plains.

Champains.] The Name of Champains is given commonly to Plains of large extent, as the Champain of *Rome:* or to very Plain Countries; ſo we ſay Champain Countries, and hence a Province in *France* took the Name of *Champagne.* The Word is ſometimes applyed to any even Spot, in which ſenſe we ſay Champain Grounds.

Plain.] A Plain ſignifies, properly, a ſmall Space of Land, flat and even without any conſiderable Eminence, as the Vale of *Eveſham, Salisbury* Plain; but put in the plural Number, Plains, they deſignate large Champain Countries.

2. Elevated Land, may be diſtinguiſhed into Mountains, Hills, Hillocks or Mounts, and Rocks.

Mountain.] A Mountain is an Eminence of the Earth, very much elevated above the Surface.

Under the Name of Mountain is often included a Series or Chain of Mountains, as when we ſay the Mountain *Taurus* or *Caucaſus.*

Mountainous Countries are by us called Highlands, as the Highlands of *Scotland.*

Hill.] A Hill is a middling Mountain: tho' the Term is indifferently uſed, to ſignify the greater Kind; ſo we ſay the *Apennine* and *Pyrenean* Hills, as well as Mountains.

Mount.] A Mount is the Diminutive of Mountain, as Hillock is of Hill; they both ſignify any very ſmall Riſing of the Earth, tho' ſometimes Mount ſtands for Mountain; ſo we ſay Mount *Taurus,* Mount *Caucaſus,* more uſually than the Mountain *Taurus* and *Caucaſus.*

Rock.] Rocks are huge Heaps of Stones, ſcatter'd over the Mountains; and, chiefly towards the Top, riſing in various uncouth Forms, for the moſt part ſtreight upwards, and forming Precipices.

3. Sunk or hollowed Land is often called Low-lands; it may be diſtinguiſhed into Valleys, Paſſes, *&c.*

Valley.] A Valley, Vale, or Dale, is a hollow or concave Surface, form'd by the Deſcent or Sloping of Mountains, Hills, Hillocks, or other riſing Grounds ſurrounding it.

That is properly called a Valley, which has a River or Brook running thro' the middle or bottom of it, with long and narrow Plains called Meadows, extending on each ſide along its Courſe.

Mountainous Countries are full of Valleys; tho' they are often found in Lands where there are no Hills at all, as near *Paris* the Valley of *Montmorency,* the Valley of *Palaiſeau.*

Valleys, whoſe Deſcents are gentle and eaſy, are called Bottoms; but a Bottom is commonly without any Water, or has only a Torrent running thro' it in wet Seaſons.

Streight or Paſs. A Streight, or Defile, is a narrow Way or Paſſage between two Mountains or Hills leading from one part of a Country to another. The *Greeks* called them *Pylæ*, the *Orientals*, *Gates*, we ſometimes call them Paſſages of the Mountains, or ſimply Paſſes and Defiles, after the *French*.

II. *Mediterranean* Lands, according to the Quality of the Soil, may be diſtinguiſhed into Fertile and Barren.

Fertile Land.] Under the Denomination of Fertile Lands, we include not only cultivated Lands, but thoſe which naturally produce either Trees, Roots, Plants or other Vegetables.

Fertile Lands may be diſtinguiſhed into Wood-land, Paſture and Meadow-land.

Woodland.] Wood-land conſiſts of Foreſts, Woods, Groves, or Thickets, Coppices and Parks.

Foreſt.] A Foreſt is a large Space of Land, cover'd over with Trees. Some Foreſts are of vaſt extent, reaching ſeveral days and weeks Journey; as the *Hercynian* Foreſt, which beginning in the Weſtern parts of *Germany*, extended to the farther ſide of *Ruſſia*.

Wood. A Wood is a ſmall Foreſt, as a Grove or Thicket is a ſmall Wood; and a Coppice is a Wood reſerved for cutting at 20 years growth, but more commonly at 10. The word *Coppice* is uſed for Under-Woods, ſuch eſpecially as afford Shelter to Animals, chiefly thoſe of the Game.

Park.] A Park is a ſpot of Ground generally Woody, incloſed with Walls or Pales, wherein there are larger and ſmaller Plains, called Lawns.

Paſture Lands.] Paſture-Land, is that which produces Graſs and Herbage fit for nouriſhing Animals; ſome is incloſed, and others open.

Common.] This laſt is called a Common, becauſe our Anceſters in the diviſion of the Lands, left thoſe unfit for their Tillage, as a Waſte for the Cattle of one or more Pariſhes to Feed on.

Meadow.] Meadow is uncultivated Ground, the Graſs of which is reſerved for Hay. There are as many common as incloſed Meadows in *England*, and more in *France*.

Barren Land.] Barren Lands are thoſe which produce nothing, and are commonly called Deſerts.

Deſert.] A Deſert is any ſpace of Barren Land. There are not many in *Europe*, but they are very frequent in the other three Parts of the World. Deſerts are diſtinguiſhed into greater and leſſer, as they are more or leſs extended. Sometimes Deſerts of many Days Journey continuance are called little or ſmall

Deſerts, in oppoſition to larger; thus the great Deſert between *Aleppo* and *Baghdâd*, extending above 20 Days Journey of the *Karawâns*, is called the little Deſert, to diſtinguiſh it from that between *Aleppo* and *Baſrah*, called the great Deſert, which reaches 40 Days Journey.

Deſerts are of 2 Sorts, Sandy and Stoney.

Sandy Deſerts.] Sandy Deſerts are very common in *Aſia*, *Africa* and *America*, where they often ſpread over large Countries; ſuch is that part of *Arabia* called the *Deſert Arabia*, and that vaſt Country croſſing almoſt all *Africa* from Weſt to Eaſt, called by the *Arabs Sarrah*, which ſignifies a Deſert.

Some Deſerts conſiſt of whitiſh Sand, ſuch as thoſe juſt now mentioned; others of black Sand, of which there are ſeveral in great *Tartary*, whence they are called by the *Moguls*, *Karah Kûm*, that is *Black Sand*; of theſe the chief is that known to *Europeans* by the Name of *Sha-mo* and *Gobi*.

Stoney Deſerts.] Stoney Deſerts are more rare than Sandy, eſpecially thoſe of any great Extent; whereof the moſt conſiderable are in the Stoney *Arabia*: or indeed that whole Country may be conſidered as one Stoney Deſert, it being by the *Arabs* themſelves named *al Hajr*, or the Stone.

The name of Deſerts is alſo given to Fertile Lands which are uninhabited, as the Deſert of *Ukrain* in *Poland* along the *Dnieper* or *Boriſthenes*. Moſt of the Deſerts of *Tartary*, repreſented to be ſo dreadful and barren, are of this Sort; which is more properly named a Wilderneſs.

SECT. II.

Of the Maritime *Land or* Coaſt.

MAritime Land or Coaſt is the Parts of Continents and Iſlands lying next to the Sea.

The Maritime Land or Coaſt is divided into Shore and Strand.

Shore.] The Shore is the Extremity or utmoſt Bounds of the Coaſt along the Sea, it is called the Beach, Bank and Sea-Side; the Words *Coaſt* and *Shore* are alſo uſed indifferently.

The Coaſt or Shore may be conſidered, in reſpect either of the utmoſt Edge, or the Surface.

I. In reſpect of the Edge, or Border, Coaſts are either Streight or Winding.

Streight Coaſts are ſuch as run Direct, without any Unevenneſs along the Edge.

Winding Coaſts are thoſe running in and out; and forming Promontories of various Sizes and Shapes.

A Promontory is a Part of Land advancing far into the Sea, which may be diſtinguiſhed into Capes and Points.

Cape.] Cape, or Headland, is a Name given commonly to thoſe Promontories, the Surface of which is a Mountain, or very Elevated, as the Cape of *Good Hope*, Cape *Komorin*.

Point.]. A Point is a Promontory, whoſe Surface is low or flat, or but very little elevated.

Theſe are ſometimes by us called Forelands, as the *North Foreland*; and *Land's End*, as the *Land's End* of *England*.

II. In reſpect of the Surface, the Coaſts may be diſtinguiſhed into 3 Sorts; (1) Flat or Low, (2) High or Steep, (3) Interſpers'd with little Hills, called Downs.

Downs.] Downs are little elevations of Stones or Sand, which the Sea gathers and forms along its Banks, and which ſerve it as a Barrier. It is derived from the *French*, *Dune*, or the *German*, *Duins*, of the *Celtic*, *Dun*, a Hill or Eminence.

The *Downs* are particularly uſed for the famous Road for Ships, along the Eaſtern Coaſts of *Kent*, from *Dover* to the North Forelands. Downs alſo ſignify a high Champion, free from Trees or Shrubs, graz'd by Sheep, with hollow and riſing Places, as *Barham* Downs in *Kent*, *Banſtead* Downs in *Surry*, the Downs in *Oxfordſhire* and *Gloceſterſhire*.

Strand.] The Strand is that Part of the Shore which is cover'd with the Sea at high Water, and lies bare at Ebb.

Along this Strand, as well as in the Sea itſelf, one meets with Rocks and Sand-Banks.

Rocks.] Rocks are great Maſſes of Stone, againſt which Ships ſtriking, are wrecked or broken. They are of 3 Sorts, (1) thoſe which are never cover'd with the Sea, (2) thoſe which appear at low Water, and (3) thoſe which are always hid under Water.

Sand-banks] Sand-Banks, Shallows, which the *Greeks* called *Syrtes*, are Heaps of Sand under Water, of which ſome appear when the Tide is out, and others never appear at all.

They are called Banks, becauſe they are raiſed above the Surface of the Bottom of the Sea like a Bank; on the other hand they are called Shoals, Flats and Shallows, becauſe in thoſe places the Sea is ſhallower than elſewhere.

Theſe Banks are named Shelves, when Rocks are found mixt with the Sands.

BOOK

BOOK II.

Treating of Civil GEOGRAPHY.

CHAP. I.

Of the Nature of Civil GEOGRAPHY, *and the* Diviſion *of the Earth into* Kinds *according thereto.*

CIVIL Geography has reſpect to the Earth in its Civil State, or Temporal Diviſion. It is call'd alſo Political Geography by ſome (a); and by others is put as a Genus inſtead thereof (b); But as there is both a Civil and Eccleſiaſtical Polity, we think Civil Geography may properly enough be made a Species of Political.

Political Geography conſiders the Earth or Land only in its Artificial or improved State: whence it is by ſome called *Artificial* Geography, in oppoſition to *Natural* (c); by others *Hiſtorical* Geography (d); becauſe it draws its Materials from Hiſtory: But as *Natural* Geography does the ſame, this Denomination ought not to be reſtrained to Political.

Hiſt.] The Deſcendants of the firſt Inhabitants of the Earth, forſaking a wandering Life, the ſeveral Nations built fixt Habitations in the Parts where they ſettled; afterwards the Stronger conquered the Weaker, and they in their turns were ſubdued by others. Hence the Earth came to be overſpread with various Works of Men, and to be divided into Sovereignties, whoſe Limits have been continually changing down to the preſent.

(a) Sanſon, ubi ſupr. (b) P. Sherer, Novus Atlas. (c) Horn, Introd. Geogr. p. 1. (d) Sanſon, Introd. Geogr. Part 2. p. 100, 188.

Now as in moſt Countries there are two ſorts of Governments, one on account of the State, the other of the Religion, Human Poſſeſſions may be diſtinguiſhed into Temporal and Spiritual; whence ariſes a Diviſion of Political Geography into two ſubordinate Branches, *Civil* and *Eccleſiaſtical:* The firſt of which will be the Subject of this Book.

Civil Geography is not ſo fixt and uniform as Natural, the Works of Men being more liable to Alterations of various kinds than thoſe of Nature. Hence the Civil Deſcription requires Alterations from time to time, occaſioned by the Deſtruction of ſome Cities, and erecting of new, as well as the Changes made in the Names and Bounds of Countries, in conſequence of the frequent Wars and Revolutions in States; ſo that the Earth at different Times has ſo many different Faces, and the ſame Country appears to be ſo many different ones. Whereas the Natural Deſcription being once truely made, continues nearly the ſame for ever, and conſequently repreſents the Surface of the Earth always of one Form.

End.] The End of the Civil Species, is to exhibit the Earth as it ſtands divided into various Temporal Poſſeſſions or Dominions.

It is of uſe to all who enquire into the Political State of Nations, or read Hiſtory, which is not intelligible without its Help.

Hiſt.] The Ancients as well Pagans as Chriſtians, cultivated Civil Geography only. All their Geographical Performances, which have come to our Hands, are of this ſort; Eccleſiaſtical Geography ſeeming not to have been thought of by them.

The Moderns of late Ages have advanced Civil Geography much, but it is ſtill far from a State of Perfection; partly for want of Diſcoveries, and partly by reaſon of the frequent Changes that happen in the ſeveral Dominions of the Earth; whereby it is not only perpetually varying, but the Knowledge of thoſe Variations is difficult to come at, when they happen in remote Regions; and indeed for the moſt part eſcape the Notice of the *European* Geographers, who know very little of the Civil Diviſions of moſt Countries of *Aſia*, *Africa* and *America*. In ſhort, there are many large Kingdoms in each of thoſe 3 Quarters, whereof we ſcarce know more than their Names, and 2 or 3 Places.

Conſtit. Parts.] The Things which offer themſelves to our Conſideration in Civil Geography are, (1) the ſeveral kinds of Temporal Poſſeſſions, (2) the Parts into which they are divided, (3) the various Civil Marks or Human Improvements contained within the Civil Diviſions.

CHAP. II.

Of the ſeveral Sorts *of* Temporal *Poſſeſſions.*

Temp. Poſſeſſions.] TEMPORAL Poſſeſſions are otherwiſe called Sovereignties, Dominions and Territories; the two firſt Appellations denoting Power or Command, the laſt Property; Territories ſignifying the Lands belonging to ſome Potentate.

Sovereignties are either Independent or Dependent.

Under the Name of Independent Dominions, we underſtand thoſe which are intirely Sovereign, and acknowledge no ſuperior Powers.

We call thoſe Dependent Dominions, which hold of a ſuperior Power, either as Fiefs or Tributary.

There are ſeveral ſorts of Temporal Dominions at preſent exiſting, which are denominated from the Quality of the Poſſeſſor or Sovereign of the Nation or People who are in Poſſeſſion; and may be diſtinguiſhed into Primary and Secondary, according to the following Table.

Species of Temporal Sovereignties,
- 1. Primary,
  - 1. Monarchies,
    - 1. Empires,
    - 2. Kingdoms,
  - 2. Common-wealths,
- 2. Secondary,
  - 1. Electorates,
  - 2. Principalities,
  - 3. Dukedoms,
  - 4. Counties,
  - 5. Markgraviates, or Marquiſates,
  - 6. Palatinates,

7. Landgraviates;
8. Baronies,
9. Grand Maſteries,
10. Free Cities,
11. Archbiſhopricks and Biſhopricks;
12. Abbeys.

SECT. I.

Of the Primary *Temporal* Sovereignteis, *with an Explication of the* Terms.

Primary.] THESE Sovereignties of the Primary Claſs, may be diſtinguiſhed into Monarchies and Polyarchies, or Commonwealths; theſe are for the moſt part Independent.

Monar.] Monarchy is a *Greek* Word, which ſignifies a Country or Dominion governed by a ſingle Perſon; but Cuſtom has appropriated the Term to thoſe of the largeſt ſort, namely Empires and Kingdoms.

Empire.] Empire ſignifies no more than a Dominion, and in that Senſe might be applied to the Poſſeſſions of any Sovereign Prince; but by it is uſually underſtood a Sovereignty, which, conſiſting of ſeveral Conquered or Tributary Countries, ſurpaſſes other ordinary Dominions vaſtly in Extent.

The Monarch who reigns over an Empire, takes the Title of Emperor, or ſomething equivalent: As *Pâdiſhâh*, *Shâhinſhâh*, ſignifies King of Kings among the *Turks* and *Perſians*; *Balbâra*, ſignifying the ſame, formerly, among the *Indians*; *Kaan* or *Khân* among the *Moguls* or *Tartars*.

Emperor ſignfied originally no more than Commander or General of the Army, who among the *Romans* was called *Imperator*, and was made the Sovereign Title only in hatred to that of King, which the *Tarquins* had rendred odious. The *Khalîfahs* or *Arabian* Emperors aſſumed the ſame Titles, ſtiling themſelves *Amîr al Mûmenîn*, or Commander of the Faithful.

But the name of Empire gives no Superiority more than that of Kingdom; and in effect, tho' it was given to the Dominions of the *Aſſyrians*, *Medes*, *Babylonians*, *Perſians* and *Greeks*, their Monarchs aſſumed no other Title but that of King.

All Empires are Independent, among which one is Elective, *viz. Germany*; nor are the reſt for the moſt part ſtrictly Hereditary; for tho' the Succeſſion is preſerved in the ſame Family, the eldeſt Son does not always ſucceed, the Reigning Monarch having often a Power of nominating a Succeſſor; this the Soltâns of the *Turks* have often done, and *Peter* the late Emperor of *Ruſſia* did the ſame.

In ſome Hereditary Empires the Succeſſion can deſcend only to the Males, as that of *Germany*, *Turky*, *Perſia*, and *China*; in others, Females may inherit, as in that of *Ruſſia*, where two ſucceeded within the ſpace of a few Years, one of which reigns at Preſent.

Some have aſſumed the Title of Emperor on their Conqueſt of an Empire, as *Mohammed* the 2d, *Khân* or King of the *Turks*, on the Taking of *Conſtantinople*, and Subduing the *Greek* Empire; ſome have aſſumed it on the gaining of ſome Signal Victory, as the late *Tſar* of *Ruſſia*, *Peter* the Great.

But no Monarch can do this at pleaſure, for before he can enjoy that Title, he muſt be recognized by the neighbouring Potentates, who are equally ambitious of Glory, and therefore will not admit his Claim to that Dignity, unleſs he be much their Superior in Power, or Extent of Dominions. Thus the Monarch of *France* is acknowledged only as King among the Chriſtian Sovereigns of *Europe*, tho' he ſtiles himſelf Pâdiſhâh or Emperor, and is ſo recognized among the *Turks* and *Oriental* Powers, who reign farther off.

Kingd.] Kingdom is an Appellation given to any Dominion whoſe Monarch bears the Title of King, or one equivalent to it, as Crall among the *Sclavonian* Nations; Khân among the *Turks*, *Moguls*, and *Tartars*; Amîr and Soltân among the *Arabs*; Shâh among the *Perſians*. Sharîff of late has become a Royal Title, and is aſſumed by the Amîrs of *Mekka* and *Medînah*, as alſo by the Kings of *Morocco*, who are alſo ſtiled *Muley*.

All Kingdoms are not Independent like Empires, but become in Subjection often to other States.

1. By Conqueſt, in which Caſe the Title of King is ſuppreſs'd, and it becomes a Province of the Monarchy to which it has been annexed, altho' the Title of Kingdom ſtill remains as a Mark of Grandeur, and the Governor is ſtiled Vice-Roy; like the Kingdom of *Naples*, at preſent ſubject to the *Spaniards*; and that of *Ireland*, ſubject to the King of *Great-Britain*.

2. By voluntary Conſent or Submiſſion of the Reigning King, in order to ſtrengthen himſelf, or be protected againſt ſome Neighbouring Potentate; in which Caſe the King becomes Tributary, and is often at the Diſpoſal of the Monarch whoſe Tributary he is; as the Kings of *Georgia*, and *Mingrelia*, the firſt of whom is depoſed at Pleaſure, and another of the ſame Family ſet up in his Place by the Shâh of *Perſia*, and the latter by the Soltân of the *Turks*, who, in ſome Senſe, is himſelf Tributary to the Hân, or Khân of *Krim Tartary*, to whom he pays an annual Stipend at the ſame time that he depoſes him when he liſts.

No Potentate can aſſume the Title of King at pleaſure, or without the Conſent of the Neighbouring Powers. Within the preſent Century, three Kingdoms have been erected in *Europe*, that of *Pruſſia* in favour of the Marquis of *Brandenburg*, that of *Sicily*, which was after transferred to *Sardinia*, confer'd on the Duke of *Savoy*, and that of *Naples* given to Don *Carlos* of *Spain*.

Some Kingdoms are Hereditary, as *France*, *Spain*, and *Great-Britain*; ſome Elective, as *Poland*, *Hungary*, and *Bohemia*; altho theſe two laſt Kingdoms ſeem to be Hereditary to the Houſe of *Auſtria*.

Of Hereditary Kingdoms, ſome deſcend ſolely in the Male-Line; as *France*, where the Females are excluded by the Salique Law; in all other Kingdoms of *Europe*, as *Great-Britain*, *Spain*, *Sweden*, *Portugal*, &c. Females may inherit.

Common-wealth.] A Common-wealth, or Republick, is a Dominion or Country govern'd by ſeveral Perſons in a Body, whence it may be term'd a Polyarchy in contradiſtinction to Monarchy.

Common-wealths are of two ſorts, Pure, and Mixt.

1. Pure Common-wealths are thoſe where the People only govern; and are of three Kinds.

(1) Ariſtocracies, or thoſe which are govern'd by the Nobility only, or the principal Perſons of the Realm; as the Republick of *Venice*, *Genoa*, &c. *Sanſon* puts the Cantons of *Bern*, *Lucerne*, *Friburg*, and *Soleurre*, among the Number, but they ſeem to be of the mixt Kind.

(2) Democracies, or thoſe where the Government is lodged in the Commons only; whether it be ſuch as have veſted themſelves with the Sovereignty, in excluſion of the Nobility, as the Canton of *Baſile*; or thoſe where all are upon an Equality, as in the Cantons of *Ury*, *Switz*, and *Underwald*, where there have been no Nobles ever ſince they were expelled by the Commons.

(3) Ariſto-Democracies, or Common-wealths, where the Authority is lodged jointly in the Nobility and Commons. All the United Provinces are of this Sort; the Nobility having the Precedence only in the Aſſemblies of the States: And among the *Swiſs* Cantons, thoſe of *Zurich* and *Schaf-hauſen*, tho' the Government in theſe Countries is vulgarly ſuppos'd to be Democratical.

2. By a mixt Common-wealth, we underſtand a Sovereignty wherein the Government is partly Royal, and partly Republican, like that of *Poland*, which thence takes the Name of the Kingdom and Republick of *Poland*.

Some of the Common-wealths abovementioned, elect a Chief for Life; as the Republick of *Poland*, which gives the Name of King to its Head, and the Republick of *Venice*, and *Genoa*, who call theirs Doge, that is, Duke: Moſt of the other Common-wealths elect Magiſtrates, who continue in that Office but a few Years.

SECT. II.

Of the Secondary *Temporal* Dominions, *with an Explication of the* Terms.

Secondary.] BY the Dominions of the Secondary Kind, we underſtand all Sorts of Sovereignties inferior to that of Kingdom; whereof there are many in *Europe*, which had their riſe from the Weakneſs of the Kings, whereby the Governors in moſt of the *European* States made themſelves Sovereigns of the Provinces truſted to their Adminiſtration. But by degrees, what by Force, and what by Marriages, moſt of thoſe Provinces which had been wreſted from the Crown were reunited to it; whereby the Titles of Duke, Palatine, Marquis, Count or Earl, Baron, *&c.* which were before Titles of Office and Power, became Titles only of Honour and Dignity, as they are at preſent in *Great-Britain* and *France*. The reſt became Feodatory, their Sovereigns holding of ſome other Potentate as their Superior or Lord, and paying Homage or Tribute to him, at the ſame time that they were Abſolute in their reſpective Territories, being in effect Kings without the Title and Quality: of which Kind are the Secondary Sovereignties, which take their Names from the Quality of the reſpective Governors at the time of their becoming Sovereign Princes; ſuch as Electorates, Principalities, Dukedoms, Marquiſates, Palatinates, Landgraviates, Baronies; to which may be added, Grand Maſteries, Free Cities, Archbiſhopricks, Biſhopricks, and Abbeys.

Electorate.] (A) An Electorate is both the Dignity of an Elector, and the Territory or Dominions to which the Quality is annexed.

There are no Electorates any where except in *Germany*; they depend on the *German* Empire, and are nine in Number; ſix of them belong to Secular Princes, as the Electorates of *Saxony*, *Brandenburg*, of the *Rhine*, *Bavaria*, *Brunſwick*, or *Hanover*; the other three are ſubject to Eccleſiaſtical Princes, *viz.* Thoſe of *Mentz*, *Treves*, and *Cologne*.

Tho' the Cuſtom ordinarily be in *Germany* for the Sons of Princes (who all bear the ſame Title) to ſhare their Fathers Lands and Territories among them; theſe whereto the Electorate is attached are not uſed to be divided, but paſs entire to the eldeſt Son, who ſucceeds to the Electorate, (a) in order the better to ſupport the Electoral Right.

(a) See Chambers's Cycloped. Art. Elector and Electorate.

(A) Elector comes from the *Latin*, *Eligere*, to chooſe, and ſignifies a Perſon who has a Right to elect or chooſe another to an Honour, Office, &c. but the Word is particularly, and by way of eminence, appropriated to the Princes of *Germany*, in whom lies the Right of electing the Emperor, being all Sovereign Princes, and the principal Members of the Empire.

The Origin of Electors is not well known; ſome refer it to *Otho* 3d. in the Year 997; others to *Frederick* 2d. who died in 1250; and others to *Rodolf* of *Hapſburg*, Founder of the *Auſtrian* Family in 1280. At leaſt their Numbers were unſettled till the Time of *Frederick* 2d.

The Golden Bull publiſh'd by *Charles* 4th. in 1346, fixed the Number of Electors to Seven; Three of them Eccleſiaſticks, *viz.* the Archbiſhops of *Mentz*, *Treves*, and *Cologne*; and Four Seculars, *viz.* the King of *Bohemia*, the Count Palatine of the *Rhine*, the Duke of *Saxony*, and the Marquis of *Brandenburg*. By the Treaty of *Munſter* in 1648, this Order was changed, the Electorate havng been transferred from the Palatine of the *Rhine*, (who was put in the Ban of the Empire,) to the Duke of *Bavaria*. An eighth Electorate was afterwards erected in favour of the former, upon his being reſtored to his Dominions and Dignities. Laſtly, in 1692, a ninth Electorate was erected by the Emperor *Leopold*, not without conſiderable Oppoſition, in favour of *Erneſt Auguſtus* Duke of *Hanover*, under the Title of Elector of *Brunſwick*, tho' he is commonly called Elector of *Hanover*.

Principalities.] A Principality is a Dominion or Country whoſe Sovereign has the title of Prince. (*B*)

There are but few Sovereign Principalities at preſent, and none which are wholly Independent. Thoſe of *Moldavia* and *Walakbia* are Tributary to the *Turk*; thoſe of the Empire hold of, and do Homage to the Emperor; that of *Monaco* in *Italy*, is under the Protection of *France*; thoſe of *Aſturias* and *Catalonia* are united to the Crown of *Spain*; that of *Wales* to the Crown of *Great Britain*.

Duked.] A Dukedom, or Dutchy, ſignifies the Dominion or Territories of a Duke. (*C*)

There are at preſent ſeveral Sovereign Dukedoms in *Germany* and *Italy*; among which there is one called Archdukedom, or Prime Dukedom, another Grand Dukedom. The Title of Archdukedom gives to *Auſtria* the Precedence above the other Sovereign Dukedoms; but that of Grand Dukedom gives none to the Grand Dukedom of *Tuſcany*, which itſelf gives place to ſeveral Dukedoms.

Beſides the Electorates of *Bavaria* and *Saxony*, which have the Title of Dukedom, there are many other Sovereign Dukedoms in *Germany*, as the Dukedoms of *Lunenburg* and *Brunſwick*, *Wirtemberg*, *Mecklenbourg*, *Holſtein*, &c. and in *Italy*, thoſe of *Savoy*, *Mantua*, and *Modena*, which hold of the Empire.

(*a*) That

(*B*) The Word *Prince* comes from the *Latin* Princeps, compounded of *Primus* and *Caput*, and ſignifies Chief or Firſt; whence it is a General Title of Honour, like that of *Lord*, and is given to all Degrees of Sovereigns. Thus thoſe who compoſe the *Germanic* Body of what Degree ſoever, whether Dukes, Marquiſes, Counts, &c. are called Princes of the Empire; even Kings and Emperors are often called Princes. In Countries where it is a particular Title of Dignity, it ſometimes takes place of all others next under the King, as in *Great-Britain*, where the King's eldeſt Son bears the Title of Prince of *Wales*, and in *Spain*, that of Prince of *Aſturia*.

(*C*) The firſt Dukes were the Commanders of Armies; under the later Emperors the Governors of Provinces were intitled Dukes. The *Franks* and *Germans* did not, like the *Goths* and *Vandals*, aboliſh the *Roman* Dignities and Form of Government, wherever they ſettled, but made it a point of Politics not to change any Thing; and as the Governors of Cities and Provinces were called Counts (*Comites*) and Dukes (*Duces*) they continued to be called ſo, theſe Dignities becoming Hereditary in the latter Times; and the Provinces under the Government of Dukes took the Title of Dukedom, ſince when ſeveral Lands have been honour'd with that Title.

(a) That of *Parma* ſeems to be Independent, tho' ſome make it a Fief of the Church; the Dukedom of *Lorraine* holds of the Crown of *France*; in *Poland* the Dukedom of *Courland* holds of that Crown, and the Grand Dukedom of *Lithuania* is incorporated with it. All the Dukedoms of *Great Britain* and *France* are Honorary.

County.] Counties are the Countries poſſeſs'd by thoſe who have the Title of Counts. (*D*)

The Counts in the latter Times got their Dignities render'd Hereditary; they uſurped the Sovereignty in *France* in the Time of *Hugh Capet*, but by degrees the Counties became reunited to the Crown, and Count at preſent is become a Title of Dignity in *France* and *England* (b); tho' in *Germany* there are great Numbers which retain their Sovereignty ſtill.

The *German* Counties or Grafſchaffts, may be diſtinguiſhed into

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(a) *Sanſon*. (b) See *Chambers*, Cyclop. Art. Count, p. 337.

(*D*) Count, comes from the Latin *Comes*, a Companion; a Title which derives its Origin according to *Dion* from *Auguſtus*, who took ſeveral Senators to be his Companions, to accompany him in his Travels, and aſſiſt him in hearing Cauſes; ſo that it ſeems to have been only a Mark of Office till *Conſtantine* converted it into a Title of Dignity, which came to be indifferently conferred on all ſorts of Officers. There were Counts who ſerved at Land, others at Sea, ſome in a Civil, ſome a Religious, and ſome a Legal Capacity; theſe Counts were made Governors of Provinces and Cities; in time of War they commanded, and in time of Peace adminiſtred Juſtice. Thoſe who governed Provinces, were equal to Dukes; the others were the ordinary Judges, and Governors of Cities under their Juriſdiction.

The *Germans* call a Count, *Graff* (*a*) which according to ſome properly ſignifies a Judge. The Power therefore both of Governing and adminiſtring Juſtice, commonly intruſted with two diſtinct Officers were united in the Counts, who being Perſons well ſkilled in the Laws, were for that Reaſon made Governors in the ſeveral Parts of the Empire.

And hence, perhaps, we may account for the Original of the ſeveral Dignities, ſtill exiſting among the *German* Princes, of *Landgrave*, *Markgrave*, *Paltzgrave*, as well as that of *Burgrave*: The firſt were the Counts, who were Governors and Judges of Provinces, the *Markgraves* thoſe who preſided and adminiſtred Juſtice in the Marches or Frontiers; *Burgraves* were the Counts ſet over Cities; and *Paltzgraves* the Chief Juſtices of the Emperor's Palace.

(*a*) See *Chambers*, Cyclop. Art. Count, p. 337.

into two Sorts; ſome have been erected into Principalities, as the Counties of *Naſſau*, *Eaſt-Friſeland*, *Furſtenberg*, *Hohenzollern*, &c. the reſt are ſimply Counties, as thoſe of *Benthem*, *Lippe*, *Hoenlo*, *Mansfeld*, *Hanau*, &c. (a)

England, *Scotland*, and *Ireland* are divided into Counties, but the Sovereignty of them all lies in the Crown of *Great-Britain*.

Marquiſates.] Marquiſate, or Markgraviate, as the *Germans* call it, is the Territory of a Marquis. (*E*)

There are Sovereignties of this Kind only in *Germany* and *Italy*; the Marquiſes of *Great-Britain* and *France* being only Titular.

The Marquiſates of *Germany* are very ancient; they were formerly on the Frontiers of the *German* Empire: That of *Brandenburg* erected againſt the *Vandals*, before they were united to the Empire under the Name of *Pomerania*; that of *Miſnia* againſt *Bohemia*, before it was a Fief of the Empire; thoſe of *Baden* and *Hochberch*, againſt the Kingdom of *Auſtraſia*, before it was incorporated with the Empire; and in the Low Countries the Marquiſate of the Holy Empire, or *Antwerp*, for the Defence of the Empire againſt the *Friſons*, who in thoſe times were a ſeparate State.

The laſt of theſe Marquiſates is united to *Brabant*, and poſſeſs'd by the King of *Spain*; that of *Hochberch* belongs to the Houſe of *Baden*; and that of *Miſnia* makes a Part of the Elector of *Saxony*'s Dominions. So that at preſent there remain no Marquiſates in *Germany* which make diſtinct Sovereignties, excepting thoſe of *Brandenburg* united to the Electorate, and *Baden*, which alſo is divided into two, on account of the two Branches of the Houſe, namely *Baden* and *Durlach*.

In *Italy* there are alſo ſome Sovereign Marquiſates, but of very ſmall extent. (b)

(a) *Sanſon* ubi ſuper. (b) *Sanſon* Introd. a la Geogr. part 1, l. 3. chap. 5. p. 48.

(*E*) A Marquis was formerly the Governor of Frontier Cities, or Provinces called the *Marches*, holding a middle place between the Dignity of a Duke and that of an Earl or Count, tho' they ſeem originally to have been inferior to both (*a*); they were eſtabliſh'd formerly to ſecure the Borders againſt the Neighbouring Powers, but ſince they became Hereditary, the Name of Marquiſate has been given to Lands at a great diſtance from the Limits, and even in the middle of Countries.

(*a*) See *Chambers*, Cycloped. Art. Marquis, p. 501.

Palatinate.] A Palatinate, or County Palatine, is the Signory poſſeſs'd by a Palatine. (F)

The Word is derived hence, that antiently the Emperors ſent Judges of their Palace, whom they called *Comites Palatini*, or *Paltzgraves* (which ſignifies Governors of the Palace) to correct the Abuſes of the other Judges in the Provinces of *Saxony*, *Bavaria*, *Franconia*, and the *Rhine*, which were thence all called Palatinates; tho' the Name remains only to the laſt. (a)

The Palatinates now ſubſiſting are either thoſe of *Germany* or *Poland*.

Under the Name of Palatinate in *Germany*, are to be underſtood thoſe Territories to which the Vicariate of the Empire is attached during the Interregnum, of which there are two; the Palatinate of the *Rhine*, and that of *Saxony*. The latter does not appear to have formed a ſeparate or at leaſt any conſiderable State, and is at preſent united to the Electorate and Dukedom of *Saxony*: But that of the *Rhine* has for many Ages been a great Dominion with the Title of Electorate. It is divided into two Parts; the Upper, or of *Bavaria*, comprizing the Territories which that Elector poſſeſs'd

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(a) Dict. de Trev. Art. Palatin, p. 446. and *Chamb.* Cycloped. Art. Palatine, p. 736.

(F) Palatine, in the antient Cuſtoms, was a Title given to all Perſons who had any Office or Employment in the Prince's Palace; and Count Palatine a Title of Honour with which their Services were requited.

According to ſome they were originally thoſe who had the Superintendance of the Palace, the ſame with what the *Greeks* call *Curopalatæ*, and the *French* *Maires de Palais*, tho' in ſome time the Name became more general; the only Palatine of this kind now ſubſiſting is the Palatine of the *Rhine*.

The Title of Count Palatine was after conferred on thoſe delegated by the Prince to hold a Court of Juſtice in ſome Province; and to ſuch among the Lords as had a Palace, *i. e.* a Court of Juſtice in their own Houſes.

Thus the Hiſtories mention the Palatines of *Champaigne*, who ceaſed when that Province was united to *France*, which had Palatines from the commencement of the Monarchy, who were ſtiled Palatines of *France*, not of the Empire. The *French* Writers therefore pretend that other Nations borrowed the Name from them. There were formerly alſo Palatines of *Bearn*, as appears from *Froiſſart*. At preſent the Title is reſtrained to a Prince of *Germany*, or Lord of *Poland*, poſſeſs'd of a Palatinate.

poſſeſs'd in *Bavaria*; and the Lower, or of the *Rhine*, on account of its being ſituated on that River. (a)

The Palatinates in *Poland* are the Provinces and Diſtricts of the *Poliſh* Grandees or Senators, who are the Governors thereof. There are 32 in that Kingdom only.

Lancaſhire, *Cheſhire*, and *Durham* are Palatinates in *England*; and the County of *Tipperary* in *Ireland*.

Landgraviate.] Landgraviate is the Territories ſubject to a Landgrave. (G)

There are ſeveral of theſe in *Germany*, of which there are but four with the Title of Principality, *viz.* thoſe of *Thuringen*, *Heſſe*, *Leuchtenberg*, and *Alſace*. But this laſt is at preſent united to *France*; that of *Leuchtenberg* is annexed to the Houſe of *Bavaria*; and that of *Thuringen* to the Houſe of *Saxony*: So that only that of *Heſſe* ſubſiſts at preſent, divided into two Branches, *Heſſe-Caſſel*, and *Heſſe-Darmſtat*. (b)

Barony.] A Barony is the Dignity, Territory, and Fee of a Baron. (H) Baronies

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(a) *Sanſon* ubi ſuper, p. 47. (b) *Sanſon* ubi ſuper, p. 49.

(G) Landgrave is a *German* Word, which comes from Land and Grav or Graff, which ſignifies Judge. Theſe ſeem to have been the Counts who were Governors of Provinces, for a Landgraviate ſignifies a Province or County. (*a*)

(*H*) Authers are not agreed about the Word *Baron*, whether it is of *Gothic*, *Spaniſh*, *Latin*, or *Greek* Original, or what is the true import of the Word, whether a valiant or brutal Perſon, a Peaſant or mercenary Soldier. However that be, it became at length a Title of Honour given for the moſt part to military Men, on whom the King beſtowed Land in Fee, with certain Privileges, ſome greater, ſome leſſer, annexed to their reſpective Tenures, for which they were obliged to ſerve him in his Wars, and bring a certain Number of Troops into the Field at their own Expence; by which means ſeveral Countries of *Europe*, particularly *England* and *Ireland*, became divided into many little Signiories or Lordſhips called Baronies, of the ſame nature with the *Timars* at preſent among the *Turks*.

Hence the Title of Baron, tho' in degree inferior to that of Count and Viſcount, became very honourable, and was affected by all the higher degrees of Nobility. In the 13 Century it became ſo Noble that ſome quitted the Title of Prince to aſſume that of Baron (*b*); and when heretofore moſt of the Dutchies, Counties, Viſcounties, and Marquiſates

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(*a*) Heiſſ. Hiſt. Emp. l. 6. c. 16. ap. Dict. Trev. Art. Landgrave, p. 1279.

(*b*) See Dict. Trev. Art. Baron.

Baronies were antiently the principal Fiefs of moſt of the Countries of *Europe*, but at preſent there are no Sovereign Barons but ſuch as are Members of the *German* Empire; among which are thoſe of *Waldeburg*, *Papenheim*, &c.

The greater part of theſe Baronies have been ſince erected into Titular Dutchies, Principalities, Counties, Marquiſates, Viſcounties, &c. (a)

SECT. III.

Grand-Maſtery, Free-City, Archbiſhoprick, Abbey.

Grand-Maſtery. GRAND-MASTERIES are the Territories belonging to the Grand-Maſters of certain military Orders, of which there have been ſeveral; but at preſent there are only two ſubſiſting, *viz.* thoſe of the Knights of *Malta*, and the Knights of the *Teutonic* Order. Theſe are the only Orders which have their Sovereign Chief, but with this difference, that the Grand-Maſter of the *Teutons* is one of the Princes of the Empire, and moſt of his Dependances are poſſeſs'd by the Proteſtants. The Grand-Maſter of the Order of *Malta*, on the contrary, maintains ſeveral Galleys againſt the *Mohammedans*, and has his Ambaſſador always reſiding at the Courts of the principal Popiſh Powers.

Free-City. Free-Cities are thoſe which are govern'd in form of Republics. There are to be found of theſe only in *Germany*, whereof there are two Sorts: Thoſe of the firſt Sort are called Imperial Cities, as being Members of the *German* Empire; ſuch as *Cologn*, *Worms*, &c. the others are ſimply

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(a) *Sanſon* ubi ſuper, p. 58.

quiſates of *Europe*, were no more than Governments and Offices, all the great Lords were known only by the Name of Barons, and their Signiories were called Baronies (*c*) But when they became Sovereigns or Feodatories themſelves (to which this Inſtitution of Barons ſeems to have been the Motive) they reaſſumed their former Titles, and made Barons of their own. In *England*, the Earls Palatine, and Earls Marchers had their Barons; and in *Cheſhire* there is one Barony ſtill ſubſiſting, *viz.* that of *Burford*, and ſeveral in *Ireland*.

(*a*) *Sanſon* ubi ſuper, p. 58.

ſimply Free, and hold of the Princes in whoſe Territories they are ſituate, as *Bremen*, &c. but the firſt Sort only are Sovereignties.

Archbiſhopricks and Biſhoprick. Under the Name of Sovereign Archbiſhopricks and Biſhopricks, we here underſtand certain Eſtates in *Germany*, which, beſides the Eccleſiaſtical Juriſdiction that extends only over the Conſciences, have the Sovereignty of their temporal Domains, and as ſuch are Members among the Princes of the Empire.

Beſides *Mentz*, *Treves*, and *Cologn*, there is no Sovereign Archbiſhoprick in *Germany* except that of *Saltzburg*.

There are in *Germany* ſeveral Sovereign Biſhopricks. The moſt conſiderable Popiſh ones are thoſe of *Munſter*, *Wurtzburg*, *Bamberg*; *Ausburg*, and others have been ſeculariz'd in favour of the Proteſtants into Principalities, as thoſe of *Alberſtadt*, *Minden*, *Swerin*, *Ratzburg* (a). The Sovereignty of the Biſhoprick of *Oſnaburg* is poſſeſs'd alternately by a Romaniſt and Proteſtant. When a Romaniſt is Sovereign he takes the Title of Biſhop; but when it falls to the Proteſtant's turn, he is called Adminſtrator of the Biſhoprick, and governs only in Temporals, and he has a Seat among the Eccleſiaſtical Princes in the Diets of the Empire.

Theſe Archbiſhops and Biſhops are elected by their Chapter; they depend on the Pope as to Spirituals, but as Temporal Princes they are obliged to take their Inveſtiture from the Emperor. (b)

Abbeys.] There are alſo a great Number of Sovereign Abbeys in *Germany*, (*A*) the Religious of which elect their own Abbots or Abbeſſes. The moſt conſiderable of the firſt Sort, or thoſe govern'd by Abbots, are the Abbeys of *Corbey* in *Weſtphalia*, and *Fulde* in *Heſſe*; which laſt has the moſt extenſive Juriſdiction of all. Among thoſe of the ſecond Sort, govern'd by Abbeſſes, is the Abbey of *Quedlinburg* in *Saxony*, and thoſe of *Lindau* and *Rotenmunſter* in *Swabia*, &c.(a)

(a) See *Sanſon* Introd. a la Geogr. part 1. l. 3. chap. 5. p. 45.

(b) *Sanſon* ubi ſuper, p. 46.

(*A*) In the early Days of the *French* Monarchy, Dukes and Counts were called Abbots, and Dutchies and Counties Abbeys; even ſome of their Kings are mentioned in Hiſtory under the Title of Abbots. *Philip* I. *Lewis* VI. and afterwards the Dukes of *Orleans* were called Abbots of the Monaſtery of *St. Agnan*. The Dukes of *Aquitain*, Abbots of *St. Hilary* at *Poitiers*; and the Earls of *Anjou*, Abbots of *St. Aubin*, &c.

Among us the mitred Abbots were alſo call'd Abbots Sovereign, and Abbots General, and were Lords of Parliament: Of theſe *Coke* reckons 27, beſides two mitred Priors; the reſt were ſubject to the Dioceſan. (*a*)

(*a*) See *Chambers*, Cyclop. Art. Abbey and Abbot.

CHAP. III.

Of the ſeveral Sorts of Parts, or Subordinate Juriſdictions, into which Temporal Dominions are divided, with an Explanation of the Terms.

ALL Sovereign Dominions, for the better Regulation of the Affairs thereof, are divided into Parts, which are diſtinguiſhed by the general Names of Provinces, Dioceſes, Governments, Commanderies, Juriſdictions, Countries, Territories, Cantons, Quarters, Diſtricts, and the like.

SECT. I.

Province, Dioceſe, Government, Commandery, Juriſdiction, &c.

Province.] THE Word *Province* ſignifies properly a conquered Country, being the Name given by the *Romans* to thoſe Parts at any time ſubdued by their Arms, and added to their Dominions: but it is commonly uſed in *Europe* as a general Name to ſignify the Parts, eſpecially the larger, into which any Country is divided.

Dioceſe.] Dioceſe is a *Greek* Word, ſignifying Adminiſtration, or Government; and was in uſe among the *Romans*.

The firſt Diviſion of the Empire into Dioceſes is ordinarily aſcribed to *Conſtantine*; who diſtributed the whole into four, *viz.* thoſe of *Italy*, *Illyria*, the *Eaſt*, and *Africa*. Yet long before this the *Romans* had divided *Aſia* into Dioceſes;

(a) *Sanſon* Introd. a la Geogr. Part 1. l. 3. Ch. 5. p. 46.

Dioceſes: and *Strabo* complains of the Confuſion ſuch a Diviſion occaſion'd in Geography; *Aſia* being no longer divided by Nations, but by Dioceſes, or ſingle Juriſdictions, each of which had a Tribunal, or Court, where Juſtice was adminiſtred (a). Thus at firſt a Province included divers Dioceſes; and afterwards a Dioceſe came to comprize divers Provinces. In After-times the *Roman* Empire became divided into 13 Dioceſes, or Prefectures; tho', including *Rome* and the ſuburbicary Regions, there were 14. Theſe 14 Dioceſes comprehended 120 Provinces: each Province had a Proconſul, who reſided in the Capital or Metropolis; and each Dioceſe of the Empire had a Conſul, who reſided in the principal City of the Diſtrict (b). At preſent the Word *Dioceſe* is almoſt wholly applyed to the Eccleſiaſtical Diviſion of Countries, being almoſt wholly out of uſe in the Civil, the Word Government being uſed ſometimes inſtead of it.

Government.] Government is a general Term, which may be apply'd to the Extent of any ſort of Juriſdiction in a Country; but is commonly reſtrain'd in thoſe Dominions where it is uſed, as in *France*, and *Norway*, to the larger Provinces or Diviſions of Countries: the *Spaniards* call them Governacions.

Commanderies.] Commandery is another Term, of much the ſame import with Government, and is alſo given to Provinces in ſome Countries.

Juriſdiction.] Juriſdiction ſignifies any Extent of Country, which hath recourſe to one Judge, or is under a Commander or Governor; it anſwers to the *Spaniſh* Audiencia, or Audience, which ſignifies a Court of Juſtice.

Country.] Country is an indefinite Term, and may be apply'd to any Extent of Earth, from a Continent to the ſmalleſt Diſtrict or Town-land. Thus we ſay the Countries of *Europe*, to denote the Dominions thereof; *Italy* is a fine Country. Nor does it denote any particular Diviſion or Juriſdiction, like Canton, Diſtrict, and the other Terms; thus we ſay, Between *Paris* and *Orleans*, or *Paris* and *Antwerp*, is a fine Country, without any Conſideration of the Diſtance of Provinces or Dominions.

Territory.] Territory ſignifies properly the Lands poſſeſs'd by, or belonging to any Sovereign Prince, People or City; and ſo is apply'd indifferently either to the whole Dominions of any Prince, or to any Part of it.

(a) Vid. *Cicer.* l. 3. Ep. ad famil. Ep. 9. and l. 13. Ep. 67. *Strab.* l. 13. p. 432. (b) *Chambers*, Cycloped. Art. Dioceſe, p. 218.

Quarter.] Quarter is alſo a Word of various Signification; it being apply'd either to a Diviſion of the Earth in general, that of a Province, or of a ſingle City.

Canton.] Canton ſignifies a Quarter, or leſſer Diviſion of a Province or City. The Original of the Word is not certain: 'tis thought to come from the *Italian* Word *Canton*, which ſignifies a large Part of an Angle of a Stone (a); but with what Propriety or for what Reaſon, does not appear.

Diſtrict.] Diſtrict ſignifies properly the Place wherein a Man has the Power of Diſtraining, or the Limits wherein he may be compelled to appear; and is the Name given to the Extent of the Juriſdiction of a Judge, called in *England* a Circuit. But it is commonly uſed to expreſs any leſſer Diviſion or Subdiviſion of a Province, like Canton, or Quarter. The Word may be alſo apply'd to a Town-land, or Liberties of a City, or the Wards of the City it ſelf.

SECT. II.

The various Application of the foregoing Terms.

THESE general Terms are ſometimes reſtrained to particular Diviſions and Subdiviſions of States: thus *France* and *Norway* are divided into general Governments; *North Jutland* in *Denmark*, *Languedoc* in *France*, *Gallicia*, *Arragon*, and *Granada* in *Spain*, into Dioceſes; *Chili* into Juriſdictions; *Mexico* into Audiencies or Governacions; *Switzerland* into Cantons; the Dutchies of *Guelders*, and *Brabant*, alſo the County of *Flanders* into Quarters; *Dauphiny* in *France*, *New-Caſtile*, and the Republick of *Venice* into Countries; *Old-Caſtile*, *Valencia*, *Murcia*, and *Andaluſia* in *Spain*, as alſo the *Milaneſe* in *Italy*, into Territories; *New Caſtile* into Comarcas, which ſignify Territories, or Diſtricts. Beſides theſe general Names, each Diviſion of a Country has both a proper Name and an Appellation, to diſtinguiſh the Quality, or Degrees of Subordination one to another; which Names are taken, (1) Sometimes from the Situation, as *North*

(a) See *Chambers*, Cycloped. Art. *Canton*.

and *South Holland*; *Eaſt* and *Weſt Frieſland*; Eaſtern and Weſtern Coaſt of *Genoa*; *Upper* and *Lower Saxony*, *Normandy*, *Picardy*, *Champagne*, *Alſace*, &c. *Hither* and *Farther Calabria*, *Abruzzo*. (2) Sometimes from the Quality of the Soil; as the *Deſert*, *Stony*, and *Happy Arabia*. (3) Sometimes from the different Nations which poſſeſs or inhabit them; as *French Flanders*, *Spaniſh Flanders*, *Dutch Flanders*; *Venetian*, *Raguſian*, and *Turkiſh Dalmatia*. But (4) moſt commonly from the Governors of them: Thus the larger Provinces are called Capitaneries in *Braſil*; the Diviſions of Provinces, Palatinates in *Poland*; Grand Bailliages in *Burgundy*; Bailliages in *South Jûtland*, and the *French County*; Chaſtellanies in *French Flanders*; Seneſchallies in *Provence* in *France*; Vigueries in *Perpignan*, and *Catalonia*, in *Spain*; in *Biſcay*, *Navarre*, and *New Caſtile*, alſo in *Spain* they are called Merindadas; and Biſhopricks in *Britany* in *France*.

The like Cuſtom prevails in the *Oriental* Countries. In *Turky* the larger Diviſions, or great Provinces, are called Beiglerbeighlics, the next Sanjaklics; as being the Governments of Beighlerbeighs and Sanjaks. The Sanjaklics are ſubdivided into Ziamets and Timars, denominated from their Zaims and Timariots, who are of the Nature of Barons formerly in *Europe* (a). In *Perſia* the great Provinces are govern'd by Beiglerbeighs; thoſe are divided into leſſer, govern'd by Khâns; and theſe ſubdivided into others govern'd by Soltâns (b): which Provinces or Governments are thence denominated Beighlerbeighyats, Khâniyats, and Soltâniyats.

Wherever it happens that the Parts which compoſe any State have been Sovereignties, they ſtill retain the Diſtinction; either out of Grandeur to the Poſſeſſor, or in their own Right, as being annexed to his Dominions not by Conqueſt but Deſcent. Thus in *Spain* the Provinces of *Caſtile*, *Arragon*, *Valencia*, &c. are called Kingdoms, becauſe they were ſo at the times they were united to the *Spaniſh* Monarchy; and the Governors have the Qualities of Vice-Roys. The Parts into which *England* is divided are called Counties (as well as Shires); and the Subdiviſions of the Provinces in *Ireland*, Baronies, as having been formerly the Poſſeſſions of feudal Counts and Barons: but the Perſons appointed to govern them at preſent have not thoſe Titles given to them.

CHAP.

(a) See *Ricant*, Preſ. State *Ottom.* Emp. B. 1. Ch. 12. and B. 3. Ch. 3.
(b) Vid. *Kempfer*. Amœn. exotic. Faſc. 1. Relat. 10. p. 135. et ſeqq.

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CHAP. IV.

The Parts contain'd within the ſeveral Civil Diviſions, or the ſeveral Kinds of human Improvements, with an Explication of the Terms.

THE Improvements or Alterations made by the Hands of Men in the Surface of the Earth, conſiſt chiefly of Cities, Towns, Villages, Caſtles, Fortreſſes, and other Structures erected for Security, Defence, Society, and other Conveniencies of Life.

City.] A City, from the Latin *Civitas*, ſignifies either, 1. A State or People, with all its Dependancies, conſtituting a particular Republic; ſuch as *Gaul* was divided into in *Cæſar*'s time, or like the Imperial or Free Cities of *Germany*, and the *Swiſs* Cantons at preſent: or 2. A Place conſiſting of a large Collection of Houſes interſected with Streets for ſake of Intercourſe.

'Tis hard to ſay what conſtitutes a City. In *Italy* all the Biſhops Sees are Cities: in *Spain*, thoſe are called Cities which have a Right of ſending Deputies to the Aſſembly of the States.

The Diſtinction of City is uſed in *France* only in ſome Provinces; and ſeveral Places are divided into City and Town, as *Paris*, *Arras*, &c. where the Antient Town is called City, and the New is called Town (a). In ſhort the Title of City belongs to all Capitals of Sovereign States, and may be given to thoſe of Provinces, and ſuch others as excel in Largeneſs, Populouſneſs, and Wealth; or enjoy ſome remarkable Honours and Privileges.

Of Cities, ſome are incloſed with Walls, and augmented with Suburbs or Out-buildings; others have neither, which are called open Cities. The Inhabitants of Cities commonly compoſe a Community, of which the Adminiſtrators in ſeveral Countries go by different Names, as Mayors, Conſuls, Provoſts, &c.

(a) *Sanſon* ubi ſuper, p. 59.

Town.] A Town is a Place next in Degree below a City, tho' the Names are commonly confounded, and Cities are properly no more than great or eminent Towns. It comes from the *Saxon*, *Tun*, a Hedge with which they incloſed their Houſes in time of War; whence all Places that contain'd any Number of Tenements cloſe together got the Name of Tuns, or Towns, (a). At preſent 'tis given to a large Place with ſome Streets, whether walled or unwalled.

There are among us ſeveral Kinds of Towns; Borough-Towns, Market-Towns, and County-Towns.

Borough.] A Burgh or Burrow, in *Saxon*, *Borhoe*, was primarily meant of a Company conſiſting of ten Families who were bound and combined together as each other's Pledge. Afterwards it came to ſignify a Town that had ſomething of a Wall or Incloſure about it: but in latter Times the ſame Appellation was beſtowed on ſeveral of the moſt conſiderable Country Towns not walled.

Borough is frequently uſed in *England*, for a Town corporate, or a Corporation, which is not a City; but it is equally ſuch whether it be incorporated or not, there being great Numbers of our *Engliſh* Boroughs not incorporated; and, on the contrary, ſeveral Corporations that are not Boroughs. But the Name of Borough at preſent is particularly appropriated with us to ſuch Towns and Villages as ſend Burgeſſes or Repreſentatives to Parliament (b), of which the Number is 151. beſides nine *Scotch* Royal Boroughs. In *France* thoſe Villages are called Burghs which have a Right of Markets, whereof ſome are walled (c).

Village.] A Village is an Aſſemblage of Houſes, inhabited chiefly by Peaſants and Farmers, who have not the Right of Burgeſſes; it has uſually a Church, but no Walls or Market, the Want of which laſt diſtinguiſhes it from a Town. The Word is *French*, form'd of *Vil*, or *Vilis*, low, mean, contemptible. Among our *Saxon* Anceſtors, Vill, or Village, was uſed in the Senſe of the Roman *Villa*, *viz.* for a Country-Farm or Seat, furniſh'd with convenient Outhouſes, &c. for repoſiting the Fruits thereof. Afterwards it came to be taken for a Manor, then for a Part of a Pariſh, or the Pariſh itſelf. (d)

(a) Verſteg. Antiq. Ch. 9. p. 231. Art. Ton. (b) See *Chambers*, Cycl. Art. Borough. (c) *Sanſon* ubi ſuper. p. 60. (d) See *Chambers*, Cycloped. ubi ſuper.

A Ham, or Hamlet, is a ſmall Village, conſiſting of a few Houſes.

Fortreſs.] Fortereſſe, or Fortreſs, is a general Name for all fortified Places, whether ſo fortify'd by Nature or Art; ſuch as Towns, Citadels, Forts, Caſtles, Towers, Redoubts, Sconces, *&c.*

It ſignifies properly a fortify'd Town, or great Fort equal in Extent to a Town, or to the Citadel belonging to a City.

Citadel.] A Citadel comes from the *Italian*, and ſignifies a little City, tho' originally this Name was given to that Part of the City which was intrenched by Fortifications for the Inhabitants to retreat to in caſe of Neceſſity; and Cuſtom has ſince conferr'd it on thoſe Works built to keep Towns in Awe, or lodge the Garriſon.

Fort.] A Fort is a little Fortreſs, or fortify'd Place of ſmall Extent, incompaſſed round with a Mote, Rampart, and Parapet, in order to ſecure ſome high Ground, or Paſſage of a River, to make good an advantageous Poſt, to fortify the Lines and Quarters of a Siege, and the like.

A Caſtle is a fortified Houſe: A Tower, a tall Building, round or ſquare: Redoubts, and Sconces, ſmall Forts.

To theſe might be added ſeveral other Sorts of Improvements or Alterations made by Men in the Surface of the Earth, by incloſing Lands, making Highways, cutting Canals, rendring Rivers navigable, raiſing or levelling Mountains, building Walls to ſecure Frontiers, and the like.

BOOK III.

Treating of Eccleſiaſtical GEOGRAPHY.

CHAP. I.

Of the Nature of Eccleſiaſtical GEOGRAPHY.

ECCLESIASTICAL Geography conſiders the Earth in its Spiritual State; whence alſo it may be called Sacred or Religious Geography, in which Senſe it ſtands oppoſed to Civil Geography.

Diſtinction.] It may alſo be term'd Hierarchical, as it is by ſome Epiſcopal Geography, (a) as relating to the Juriſdiction of the Clergy and Biſhops. Some apply this Term to the Geography contain'd in the Sacred Books, which is alſo called Sacred and Scripture Geography. But this laſt Species belongs more properly to *Chorography*; as to *Topography* does *Marian* Geography, a new Species with which the *Jeſuits* have honour'd the Science, and ſo denominated as giving an Account of the Pictures and Images of the Virgin *Mary*, any where famous for Benefits and Miracles (b). The

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(a) See Mem. de Trev. for *March* 1725. p. 446. (b) P. Gumppenberg Atlas Marian. P. Sherer Geogr. Mariana, Part 3. ap. Atlant. Novum.

End and Uſe.] The End of *Eccleſiaſtical* Geography is to exhibit the Earth as divided into Poſſeſſions and Juriſdictions of the Prelates, and other Officers of the ſeveral Religions in the World.

This Species is of uſe particularly to Clergymen, and thoſe who wou'd be acquainted with the Eccleſiaſtical Hiſtory of Nations. It is alſo of ſervice to Civil Geography, as having preſerved the Names of a great number of Places to be met with no where but in the Eccleſiaſtical Writers.

Hiſt.] Eccleſiaſtical Geography was not in uſe among the antient *Greeks* and *Romans*, who ſeem to have had no occaſion for it; nor was it thought of among the Chriſtians, till the Church throwing off the Dependency on the State began to affect a Geography to herſelf. This Species is obliged to Antiquity only for certain *Notitia's* of the Churches in different Ages. It is but of late that the Weſtern Chriſtians have begun to cultivate it, and form it into a Syſtem; nor have they yet produced any thing complete on the Subject, the Books which have been written expreſly that Way, being very few. Thoſe of chief Note are, the *Notitia Epiſcopatuum Orbis Chriſtiani* of *Miræus*, the *Police Eccleſiaſtique* of *Chopin*, the *Geographia Sacra* of *Carolus a Sto Paulo*, accompany'd with Maps, which is the moſt complete hitherto publiſh'd; altho' the *Tables Geographiques* and *Chronologiques de tous les Archeveſches*, &c. of *Commanville*, is written with great Method, Labour, and Judgment: To theſe we may add what *Bingham* has written concerning the antient Biſhopricks (a), and the Catalogue given by *Fabricius*. (b)

Eccleſiaſtical Geography has been improved by the Notes of *Holſteinius* on the Work of *Carolus a Sto Paulo*, (which he has corrected in many Places) as alſo by thoſe upon the Churches of the Eaſt, of *Africa*, *Italy*, and *France*; thoſe of *Baluſius* on the Conference of *Carthage*; thoſe of P. *Ruinart* upon *Victor Vitenſis*, and the Sacred Geography of *Africa*, as it ſtands before the laſt Edition of *Optatus* by *Du Pin*. The Councils themſelves afford a competent Knowledge of Eccleſiaſtical Geography. (c)

Our Eccleſiaſtical Geography is in a much worſe State conſider'd with reſpect to the Parts out of Chriſtendom, we being but little acquainted with the Spiritual State of other

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(a) *Bingh.* Antiq. Eccleſiæ. (b) *Fabr.* Lux Evangel. ad finem. (c) See *Du Pin*, Meth. Stud. Divin. p. 240.

Countries, eſpecially thoſe which we call Heathen or Pagan.

Conſiſt. Parts.] The Things to be conſider'd in Eccleſiaſtical Geography, are the Diviſion of the Earth according to the ſeveral different Religions into which Mankind is divided, and the Poſſeſſions or Juriſdictions of the Clergy belonging to each.

The Religions of the World may be reduced to four Grand Species; the *Jewiſh*, *Chriſtian*, *Mohammedan*, and *Pagan*. Each of theſe Religions extends over ſeveral large Countries, and theſe Countries are divided into Eccleſiaſtical Juriſdictions of different Kinds; but as the Spiritual Government in moſt Countries, at preſent, is regulated on the Foot of the Civil, the ſame Diviſions ſerve for both, the leſſer being dependent on the greater, and the whole under the Juriſdiction or Direction of a Spiritual Chief or Head, who governs in Matters which concern Spirituals, in the ſame Manner as the Temporal Sovereign does in Temporals.

Spiritual Governments are called by one common Name of *Hierarchies*, that is, Holy Principalities; but as the Juriſdiction of the governing Officers extends only over the Conſciences, not the Bodies or Properties of People, they cannot properly be called Dominions or Sovereignties, excepting ſuch as have Temporalities annexed to them.

'Tis true, in ſome Chriſtian Countries, the Spiritual Governors, taking Advantage of the Weakneſs of the Princes, have, like the Temporal, thrown off their Subjection, and ſet up Sovereignties in their reſpective Hierarchies, ſuch as the Pope of *Rome*, and ſome Biſhops in *Germany*: More than this, the Pope claims a Juriſdiction over all Eccleſiaſtics of the Latin Church, and the Chriſtian Clergy pretend to be independent of the State, wherever Temporal Princes are ſuch Dupes as to ſuffer themſelves to be Prieſtridden.

In treating of the Eccleſiaſtical Hierarchies, we muſt conſider the Extent of the four ſeveral Religions abovementioned, as ſo many vaſt Regions or Parts into which the Earth is divided, denominated from the reſpective Religions in the ſame Manner as that of the Chriſtian is called *Chriſtendom*. But we are not able to give a ſatisfactory Account of the ſeveral Hierarchies comprized under the other Three, for the Reaſon abovementioned.

CHAP.

CHAP. II.

Of Pagandom, *and the Hierarchies belonging to it.*

PAGANDOM (for ſo we take Liberty to term the vaſt Share of the Earth over which what is called the Pagan or Heathen Religion is extended) comprehends in *Aſia* moſt part of *Grand Tartary* and *Siberia*, *China*, the *Mogol's Empire*, the two Peninſulas of *India*, within and without the *Ganges*, the Iſlands of the *Indian* Ocean, and that of *Japan*; it includes all *Africa*, excepting the Countries bordering on the *Mediterranean* Sea, and the Coaſts on the Weſt and Eaſt Sides; and in *America* all the Inland Parts of both Peninſulas; beſides the Share it has in all the Countries poſſeſſed by *Europeans*: To theſe we may add the *Arctic* and *Antarctic* Lands; ſo that Pagandom may include about 19 Parts in 30 of the whole Earth.

With regard to the Eccleſiaſtical Diviſion of Pagan Countries, we only know in general, that all of them, excepting the *Hottentots*, and ſome Savage Nations here and there, have their Prieſts and Church Government.

Among theſe, there is none ſo remarkable as the Great *Lama*, or Pope of the Heathen *Tartars*, who reſides in *Barantola* or *Laſſa*, between *India* and *China*, and whoſe Juriſdiction formerly extended, not only over all thoſe vaſt Countries comprehended under the Names of *Tibet* and *Tangut*, but alſo over *Grand Tartary*, from Weſt to Eaſt, as far as the Dominions of the *Manchews*, called *Eaſtern-Tartary*: But towards the End of the laſt Century, His Vicar in *Grand Tartary*, called the *Kûtûktû*, aſſumed the Title of *Great Lama*, that is, High-Prieſt or Pope, and got himſelf acknowledged as ſuch by the *Mongols*, and *Kalkas*; whereby large Poſſeſſions fell from the *Great Lama* of *Barantola*, who gulls ſilly Mankind in the Eaſt, by a Pretence both to Immortality and Divinity, being ſtiled the Immortal God; and the Cheat is ſo well carried on by the reſt of the Clergy, that it is believed by the People of thoſe Parts, that he never dies, at leaſt, that he revives again in another Body.

There

There is a Hierarchy among the *Lamas*, on whom Degrees are conferr'd by the great *Lama* (a); their Religious alſo have their Local Superiors, and over them a Superior-General (b), but we know neither their Names, Offices, nor Juriſdiction.

C H A P. III.

Of Mohammedandom, *and the Hierarchies into which the Countries thereof are divided.*

THE Space of Earth over which the Mohammedan Religion is extended, is called in *Arabic*, *Iſlâmîyat*, or the Dominion of the true Religion, and *Belâd al Iſlâm*, the Country of the true Religion, as who ſhould ſay, *Mohammedandom*.

Iſlâmîyat comprizes in *Aſia*, *Arabia*, *Turky*, *Perſia*, the *Mogol*'s Country, and Northern part of *India* within the *Ganges*; Great and Little *Bukhâria*, *Khowarezm*, the *Maldive* Iſlands, moſt of the *Iſles of the Sound*, and *Molucco's*. In *Africa* it extends over *Egypt*, all *Barbary*, the *Belâd al Jerîd*, the *Sahrah*, *Nubia*, part of *Negroland*, and moſt of the Coaſts of *Zenjibar*, all *Turky in Europe*, and little *Tartary*. *Iſlâmiſm* is alſo profeſs'd by the *Tartars* ſubject to *Ruſſia*; it has alſo made great Progreſs in moſt of the Pagan Countries of *Aſia* and *Africa*, as well as in *Abyſſinia*, but has not yet paſs'd over to *America*. *Mohammedandom* contains about ſix Parts in 30 of the Earth.

The Hierarchies into which the Iſlâmîyat is divided, differ in different Countries, tho' originally they were of the ſame Nature every where, and called by one common Name *Imâmîyat*.

Imâmîyat is the Juriſdiction of an *Imâm*; which in *Arabic* ſignifies the ſame as the *Latin Antiſtes*, one who precedes or goes before others: But the *Moſlems* or *Mohammedans* apply the Word particularly to him who is at the Head of their

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(a) P. *du Halde* Deſcr. *Chin.* and *Tart.* Vol. 4. p. 25. (b) P. *Deſideri* Voy. *du Thibet* Ap. Lett. Edif. Vol. 15. p. 198.

Aſſembly in the *Maſjeds* or *Mesku's*, and by way of Excellency to the *Khalifahs*, or Succeſſors of *Mohammed* in the *Arabian* Empire; who by Virtue of that Title were Sovereigns both in Spirituals and Temporals.

Under the Chief Imâm, or Khalîfah, there were other Imâms in every City who diſcharged that Function (a); ſo that at firſt there ſeem to have been two Sorts of Hierarchies in the *Mohammedan* Dominions: The firſt, Sovereign, and whoſe Juriſdiction was coextended with the Khalîfah, to which it was inſeparably attach'd: The ſecond, Dependent, and limited to the Verge of a ſingle Temple or Pariſh. Whether there were Imâmîyats which extended over a City, and others including Provinces, does not appear.

Afterwards, the *Arabian* Empire coming to be divided into two, and then into three Khalîfats, Mohammedandom in conſequence thereof became divided into three Prime Imâmîyats or Hierarchies; but upon the Deſtruction or Suppreſſion of the Dignity of Khalîfahs, the *Mohammedan* Poſſeſſions became divided into as many Prime Hierarchies as there were Sovereign Dominions, and thoſe again into leſſer; none of which are Hereditary Sovereignties, like the Imâmîyats, but depend on the Temporal Prince, who appoints the Eccleſiaſtical Governors at pleaſure.

In *Mohammedan* Countries, there are two Sorts of Clergy; the firſt are a Kind of Biſhops, or rather Judges both in Eccleſiaſtical and Civil Matters, the Civil Law being grounded on the *Korân*; the ſecond Sort are of the Nature of Simple Prieſts, being ſolely appropriated to the Duties of the Maſjeds or Churches.

The Head of the Juridical Order in *Turky* is called the *Mufti*, who in ſome meaſure ſupplies the Place of Chief *Imâm*. His See is at *Conſtantinople*, and Juriſdiction extends over the whole Empire. In every conſiderable Town alſo there is a *Mufti* under him, who decides Cauſes of Moment.

Next to the Mufti, is the Kâdilesker or Kâzilasker, that is, Judge of the Militia or Army, called Judge of Judges; whereof there are two, one for *Europe*, the other for *Anatolia* (b). Theſe are not unlike the Judge Advocates in *England*.

(a) *D'Herb.* Bibl. Orient. Art. Imam and Khalifah. (b) Vide Bobov. *Turc.* Liturg. p. 8. ap. Perits, Itin. Mund. Edit. *Hyde*.

The third Eccleſiaſtical Officer is the Molla, of which there are two Sorts: The firſt are Principal Judges in petty Provinces or Diſtricts, having the Kâdi's of inconſiderable Places under them; but the Juriſdiction of the other Sort extends over a Beighlerbeighlik, and the Kâdi's of the wealthier Cities; which Kâdi's are the lower and ordinary Sort of Judges (a), eſtabliſhed in the Cities and Towns.

Of the ſecond Sort of Eccleſiaſtics, are the Imâms or Parochial Prieſts: Or rather the Imâm is the leſſer Prieſt or Curate (b) of the Khâtib, who is properly the Pariſh Prieſt (c). Theſe Imâms are all Independent in their reſpective Pariſhes, not only of one another, but of the Juriſdiction of the Mufti, in what relates to the Government of their Churches. This hath ſo near a Reſemblance to the Independent Conſtitution among the Proteſtants, that it is thought they took their Model from hence. In *Perſia*, the Head Prieſt of the Juridical Order is called *Sadr*; who is Superintendent over all the Spiritualities of the Empire, and may be called the Archbiſhop or Patriarch of the *Perſians*. His See is at *Iſpâhân*.

At preſent the Office of *Sadr* is divided between two: One called the *Sadr Khâſeh*, [or the Sadr of the Palace] who is Adminiſtrator of the Goods left by the Kings of *Perſia* to pious Uſes; the other *Sadr al Mamâlek*, [or the Sadr of the Kingdom] who has the Care of pious Legacies of private Perſons throughout the Realm.

There are under the Sadr two Chief Interpreters of the Law: The firſt called *Sheikh al Iſlâm*, that is, *the Senior* or *Elder of Iſlâmiſm*; this Biſhop, or Judge, is properly the firſt Lieutenant Civil, who reſolves Queſtions, and decides civil Differences according to their Law or Korân: The ſecond is the *Kâzi*, or Spiritual Judge of civil Cauſes, who gives Precedence to the former, tho' they are both equal as as to Office (d).

Beſides theſe Judges, which reſide in the Capital City, there are others of the ſame Sort in every Province, and the ſmalleſt Cities have their *Kaxi* *(A)*. But there is a Prelate ſtill, who exceeds all the reſt in Authority, and is eſteemed the Oracle of the Law, named the *Mujtehid*. this may be called the *Perſian* Pope; and he it is properly who in *Perſia* ſupplies the Place of the Chief *Imâm* (a) who no longer ſubſiſts.

(a) See *Ricant* State *Ottom.* Emp. Part 2. Ch. 4. p. 108. (h) Bobov. ubi ſupr. (c) See *Ricaut* ubi ſupr. (d) Vid. *Kæmpf.* Amœn. exot. p. 98. et ſeqq. and *Sanſon* Preſ. State Perſ. p. 12. et ſeqq.]

The Pariſh Prieſts are called *Piſhnâma's*, that is, the *Directors of the Publick Prayers*, the Chief of whom is he who officiates in the *Shâh*'s Palace, which Place belongs to the Mujtehid (b). In other *Mohammedan* Countries, the Hierarchies differ ſomewhat: But they may be all reduced to three Orders or Juriſdictions, *viz.* of High-Prieſt, Doctors or Biſhops, and Pariſh Prieſts.

CHAP. IV.

Of the Extent of the Jewiſh *Religion, and its Hierarchies.*

JUDAISM formerly extended over *Judæa*, now call'd the *Holy Land*; but the *Jews* being a People at preſent ſcatter'd thro' the World, and without Dominion, their Religion is no where the reigning or eſtabliſh'd Religion, altho' it has Footing in moſt Countries more or leſs, whither a Thirſt for Trade carries the Profeſſors of it.

The Jews are much more numerous in *Aſia* and *Africa*, than in *Europe*; but there are none at all in *America*; altho' ſome Authors have imagin'd that they found inconteſtable Footſteps of them among the Inhabitants of that Continent (c).

(a) Vid. *Kampf.* ibid p. 101. 102. (b) id. ib. p. 104. (c) See *Thoroughgood, Jews* in *America*.

(A) Father *Sanſon* ſays the Sadr has his Deputies in all Capital Cities of Provinces, which are called *Modarres*, and are not unlike to their Biſhops: *(a)* but the Muderris properly is the Director of the Medraſſeh or Colleges. *(b)*

(a) Pref. State Perſ. p. 14. (*b*) Vid. *Kæmpf.* Amœn. exot. p. 114.

There are ſome Jews in *Great-Britain*, and *Italy*, more in *Spain*, *Holland*, and *Germany*; but the greateſt Number is in *Poland*, and *Turky in Europe*. They are found in almoſt all the *Aſiatic* Countries, but chiefly in *Turky*; and pretend to have had Dominion a few Ages ago, among the *Khozârs*, a Nation of *Weſtern Tartary*, but without Foundation. *Africa* gives Refuge to Jews in *Abyſſinia*; but there are many more in *Egypt*, and *Barbary*: Poſſibly they may even have Dominion in ſome parts of the Deſerts, as thoſe ſubdued by the *Abyſſins*, and the King of *Taſilet*. Taken altogether, the Jews may amount to about one Part in 30 of Mankind.

The Jewiſh Hierarchies were of two Sorts; that of the High-Prieſt, and Secondary Prieſts: The Juriſdiction of the firſt extended over all the Realm in Eccleſiaſtical Affairs, eſpecially when at the Head of the Eccleſiaſtical Conſiſtory eſtabliſh'd at *Jeruſalem*, compoſed of Levite Prieſts, and the Chief Fathers of *Iſrael* (a). As for the Inferior Prieſts they had no particular Juriſdiction.

CHAP. V.

Of Chriſtendom, *and the Hierarchies into which it is divided.*

Chriſtendom.] CHRISTENDOM ſignifies the Dominion of the Chriſtian Religion, or the Region over which it prevails: 'Tis alſo called the Chriſtian Dominions, to diſtinguiſh it from the *Mohammedan* or *Pagan*.

Extent.] The main Body of Chriſtendom lies in *Europe*, over all which it extends, excepting *Turky*. In *Aſia*, the Kingdoms of *Mingrelia* and *Georgia* belong to it; in *Africa*, the Empire of the *Abyſſins*; and in *America*, all the Countries ſubject to the *Europeans*. Beſides this Dominion, which comprizes about five Parts in 30 of the Earth, the natural Inhabitants of all *Turky* in *Europe*, *Aſia*, and *Africa* are Chriſtians.

In Chriſtendom there are various Sorts of Hierarchies, which differ according to the different Sorts of Church Government eſtabliſhed among the Sects into which the Chriſtian Religion is divided.

(a) 2 Chron. 16. 8.

Hiſt.] While Chriſtianity was in its Infancy, there was but one Sort of Clergy in the Church: Tho' ſome pretend there were two Sorts, that of Presbyter, ordain'd for the performance of Religious Worſhip, and that of Biſhops, for Government and Order; the Presbyter having the Care of Souls in a ſingle Church or Pariſh, and the Biſhop ſeveral Churches under his Inſpection. Afterwards Chriſtianity coming to ſpread it ſelf throughout the *Roman* Empire, it was thought proper for better Regulation of the Affairs of the Church, to ſet Biſhops over Biſhops, to preſide in leſſer Diviſions, and ſome over them again in the Provinces. At length Ambition firing thoſe of the four Capital Cities of the Empire, *Rome*, *Conſtantinople*, *Antioch* and *Alexandria*, they aſſumed a Superiority over the Provincial Biſhops, diſtributing the Provinces amongſt themſelves; and laſtly, ſlighting the Prohibition of Chriſt, a Conteſt aroſe between the two firſt, about who ſhould be the greateſt; each of them laying claim upon various pretences to a Superiority over all other Biſhops of the Church, and in their turns aſſuming the Title of Univerſal Biſhop. Hence aroſe the various Degrees of Subordinations among Biſhops, of Patriarchs, Exarchs or Primates, Metropolitans, and Archbiſhops.

The Chriſtian Church continued for ſome time in this State under the Uſurpation of the Biſhops of *Rome* and *Conſtantinople*: But at length the *Aſiatic* and *African* Prelates threw off the Yoke; thoſe of every Nation acknowledging no Head but the Biſhop of the Capital City of the Country to which they belong'd. After this the Union, which before had ſubſiſted between the *Latin* and *Greek* Churches, came to be diſſolved; and finally ſeveral Kingdoms and States renounced the Supremacy and Doctrines of the Church of *Rome*: Whereby Chriſtendom comes to be divided at preſent into a great Number of Independent Sects or Churches under different Forms of Government. Some admit of all the Degrees or Orders of Prelates abovementioned, as the *Grecian*, *Roman*, and *Ruſſian* Churches. Others have eſtabliſh'd only three Sorts, Patriarch, Archbiſhop, and Biſhop; as the *Georgians*, *Jacobites*, *Maronites*, *Armenians*, and *Neſtorians*. Some only two, Catholicos or Primate, and Biſhop; as the *Mingrelians* and *Copts*. Some have only two Orders of Clergy, Catholicos and Prieſts; as the *Abyſſins*. Some only one, *viz*. Presbyter, or Prieſts, like the *Preſbyterians*, *Independents*, &c. and ſome are ſo happy as to have no Clergy at all, as the Quakers. Hence ariſe various Sorts of Hierarchies in Chriſtendom, which are formed out of the Countries and Provinces into which the whole is divided.

SECT. I.

Of the Eccleſiaſtical Diviſion of Chriſtendom, *out of which the Hierarchies are formed.*

CHRISTENDOM, in its Eccleſiaſtical State, may be divided into Countries, Provinces, Dioceſes, and Pariſhes.

Country.] By a Country, we underſtand any kind of Sovereignty, whether Empire, Kingdom, or Republic: thus we ſay, the *Chriſtian* Countries, *Germany* or *Sweden* is a *Chriſtian* Country. Over every Country there is commonly an Eccleſiaſtical Head or Governor, who directs in Spiritual Matters: And ſometimes one Head has Juriſdiction over many Countries, wherein the ſame Sect prevails; as the Pope of *Rome*, who is Head of the *Romiſh* or *Latin* Church.

Province.] Province is the ſame with the Civil Province, whether it is to be underſtood of the modern Provinces, or the antient, which include ſeveral of the Modern: for an old *Roman* Province (which ſignifies a conquer'd Country) often comprized a whole Kingdom, which ſince has been divided into ſeveral Provinces. Every Province contains ſeveral Dioceſes, and is govern'd (as of old) by a Metropolitan or Archbiſhop.

Dioceſe.] Dioceſe, as we have obſerved before, ſignifies Adminiſtration or Government, and was originally appropriated to the Civil Diviſion; from whence it paſſed to the Eccleſiaſtical, which was grounded on it.

At firſt the Eccleſiaſtical Dioceſes were the ſame with the Civil, including ſeveral Provinces; each of which had a Vicar or Primate, who judged finally of all the Concerns of the Church within his Juriſdiction.

At preſent there is ſome Alteration; for *Dioceſe* does not now ſignify an Aſſemblage of divers Provinces, but is limited to a ſingle Province under a Metropolitan, or even to the ſingle Juriſdiction of a Biſhop: In which laſt Senſe it is moſt generally underſtood.

Gul. Brito affirms Dioceſe to be properly the Territory and Extent of a Baptiſmal or Parochial Church; whence divers Authors uſe the Word to ſignify a Simple Pariſh. (a)

Pariſh.] A Pariſh is the Precinct or Territory of a Pariſh Church: the Word comes from the *Latin*, *Parochia*; of the *Greek* Παροικία, implying Neighbourhood; becauſe (according to *Du Cange*) the Primitive Chriſtians not daring to aſſemble openly in Cities, were forced to meet ſecretly in Neighbour-Houſes.

In the antient Church there was one large Building in each City for the People to meet in, and this they called Pariſh: But the ſignification of the Word was afterwards enlarged, and by Pariſh was meant a Dioceſe, or the Juriſdiction of a Biſhop, conſiſting of ſeveral Churches; unleſs we will ſuppoſe (as ſome do) that thoſe Biſhops were only Paſtors of ſingle Churches, at leaſt the Word at preſent retains its Original Meaning.

Du Pin obſerves that Country Pariſhes had not their Origin before the fourth Century; but thoſe of Cities are more antient. The City of *Alexandria* is ſaid to have been the firſt which was divided into Pariſhes. *Baronius* ſays, that in the Time of Pope *Cornelius*, there were 46 Pariſhes in *Rome*. The Diviſion of *England* into Pariſhes is attributed to *Honorius* Archbiſhop of *Canterbury*, in 636. (b)

SECT. II.

Of the ſeveral Kinds of Hierarchies *in Chriſtendom; with Explications of the Terms.*

THE Chriſtian Hierarchies are of various Sorts, one ſubordinate to another; and may be divided into Superior, as Patriarchates, Exarchates or Primacies, Metropolitancies or Archbiſhopricks, Biſhopricks; and Inferior, as Archdeaconries, and Rural Deanries.

Patriarchate.] Patriarchate is the Juriſdiction belonging to a Patriarch.

Patriarch in the *Greek* ſignifies Chief or Prime Father; and is a Title firſt given to, or affected by the Biſhops in poſſeſſion of the Grand Sees eſtabliſh'd in the

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(a) See *Chambers* Cycloped. Art. Dioceſe. (b) id. ibid. Art. Pariſh.

the three principal Cities of the *Roman* Empire in *Europe*, *Aſia*, and *Africa*, viz. *Rome* in *Europe*, *Antioch* in *Aſia*, and *Alexandria* in *Africa*. Afterwards that Title was given to two other Sees, *viz.* of *Conſtantinople* and *Jeruſalem*. Nor did theſe five Patriarchs govern all the Church: There were many independent Chiefs of Dioceſes, who diſowning their Juriſdiction called themſelves Patriarchs; ſuch as that of *Aquileja*. *Socrates* calls all the Chiefs of Dioceſes Patriarchs, and reckons ten.

After the Name *Patriarch* became popular in the *Latin* Church, it was attributed to the Biſhops of *Bourges* and *Lions* in *France*, as Chiefs of Dioceſes, as it is at preſent to thoſe of *Venice* and *Aquileja* (a).

When the Chriſtian Church came to be divided into many Sects, moſt of the Heads aſſumed the Name of Patriarch; whence it happened that ſometimes there were many Patriarchs of the ſame Capital: Thus there is the Patriarch of the *Latin* Church, or Pope of *Rome*. The *Greek* Church has four Patriarchs, *viz.* of *Conſtantinople*, *Alexandria*, *Antioch*, and *Jeruſalem*. Each of theſe ſhould be independent, according to the Principles on which they ſeparated from the *Latin* Church: But the firſt on a thouſand Occaſions commands the other three, who are obliged to obey him (b). The *Copts* have a Patriarch of *Alexandria*, who reſides at *Cairo*. The *Jacobites* and *Maronites* have each their Patriarch of *Antioch*. The firſt reſides at *Safran*, near *Mardin* in *Meſopotamia*; the ſecond at *Kanubin* in *Mount Libanus*. The *Armenian* Church is divided among four Patriarchs: The firſt of whom reſides at *Echmiadzin* near *Erivan*, the ſecond at *Sis* in leſſer *Armenia*, the third in *Georgia*, and the fourth at *Agtamar* in the Lake of *Van*. The Power of the two laſt is bounded within the Limits of a ſingle Dioceſe. That of the Patriarch of *Sis* extends over *Anatolia*, *Syria*, and the Neighbouring Provinces; but the Patriarch of *Echmiadzin* is acknowledged by all the reſt of the *Armenians* (c).

Beſides theſe the Title of Patriarch is aſſumed or given to Heads of other Churches, who are only Catholicos's or Primates.

Till of late there was a Patriarch of the *Ruſſians*, who reſided at *Moſcow*: But the late Emperor of *Ruſſia*, *Peter*, wiſely regulating the Affairs of his Realm by what he found good in other States, at his Return from his Travels, ſuppreſſed the Dignity of Patriarch on the Death of the laſt, and aſſumed to himſelf to be ſupreme Head of the *Ruſſian* Church(a), after the Example of the King of *Great Britain*; appointing one of the Metropolitans or Archbiſhops for the Adminiſtration of Eccleſiaſtical Affairs.

(a) See *Chambers* Cycl. Art. Patriarch. (b) *Commanville* Table Geogr. & Chron. Archeveq. & Eveq. Part 2. Ch. 1. p. 169. (c) See *P. Monier* Hiſt. d' *Armen.* ap. Mem. Miſſions *Levant*, p. 53.

Among the Patriarchates there is one which is a Sovereignty, *viz.* that of *Rome*, commonly called the Papacy, the Popedom, the Eſtates of the Church, and St. *Peter*'s Patrimony. Its Sovereign is the Pope, or Chief Patriarch of the *Latin* Church (*A*).

Primacy or Exarchate.]

Primacy, or Exarchate, is the Dignity and Juriſdiction of a Primate or Exarch. A Primate is an Archbiſhop inveſted with a Juriſdiction over ſeveral Archbiſhops or Biſhops. The Term is *Latin*, and ſignifies the Firſt or Precedent of a Society; anſwering to the *Greek* Word *Exarch*, which was antiently the ſame thing with Primate, and given to the Prelates of *Cæſarea*, *Epheſus*, *Heraclea*, and *Theſſalonica*, as reſiding in Cities which had Juriſdiction over ſeveral Metropolis's. But after *Conſtantinople* had been erected into a Patriarchate, the Name became common, being given to honorary Archbiſhops, and even Biſhops, particularly when they were deputed by the Patriarchs to viſit the Churches, and receive their Dues; ſo that *Exarch* at preſent on many Occaſions ſignifies no more than Apoſtolical Vicar, or Nuncio, in the *Latin* Church (b).

The Origin of Primates, according to P. *Sirmond*, comes from hence, that the large Provinces having been divided and ſubdivided by the Emperors, the firſt Diviſions were called Firſts, others Seconds, others Thirds, &c. and the Title Primate given the Metropolitan, that is, to the Biſhop

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(a) See *Perry*'s State of *Ruſſia*, p. 207. (b) *Commanvil.* ubi ſupr. p. 169

(*A*) The Popes of *Rome* ſeem to have imitated the *Khalifahs* in joining the Temporal to the Spiritual Dominion, and particularly in aſſuming a Power of depoſing Princes, and giving away their Dominions. But there is this eſſential Difference between them, that the Authority was inherent in the *Khalifahs* by Original Right, whereas the *Popes* acquir'd it by Uſurpation and Violence.

of the City which was the Capital of the Province, ere the Diviſion was made. This Metropolitan Primate had ſome Juriſdiction over the Biſhops of the inferior Provinces, and was alſo called Patriarch.

Thoſe who hold for a ſtrict Eccleſiaſtical Hierarchy, maintain a Primate to be He who has ſeveral Metropolitans under him, as a Patriarch has ſeveral Primates: Yet it is pretty evident from Hiſtory, that Primates were at firſt confounded with Patriarchs: Thus *Socrates* enumerating ten Patriarchs, makes no Diſtinction between them and Primates. In *Africa* the Primates were not ſubject to the Patriarch, nor to be a Primate was it neceſſary to have Metropolitans for Suffragans; each Province, except thoſe which compoſed the Dioceſe of *Alexandria*, had its Primate, the Quality being given to Age.

In *France* the Subdiviſion of Provinces gave occaſion to the Erection of Primates: Thus *Aquitain* being divided into two Provinces, the Archbiſhop of *Bourges* became Primate of the *Aquitains*, becauſe *Bourges* was the Capital of the Firſt (a): Thus alſo the Diviſion of *England* into two Provinces, *Canterbury* and *York*, in 1152, gave occaſion to the Introduction of Primacies among us; *Canterbury*, which was the Metropolis before, thence giving the Title of Primate of all *England* to its Prelate, tho' the Archbiſhop of *York* ſtill claims that of Primate of *England*. And accordingly the firſt has ſome Juriſdiction over all *England*, relating to Adminiſtrations, *&c.* which the latter has only within his Province (b).

There are ſeveral in the *Latin* Church, who bear the Title of Primate, as having ſeveral Archbiſhopricks and Provinces under them; but there is ſcarce any of them who in ſtrictneſs enjoys this Right, excepting the Primate of *Lions*, the reſt having the bare Pretenſions without the Poſſeſſion (c).

All the Primates abovementioned are dependent on the Pope of *Rome*, excepting thoſe of *Canterbury* and *York*; neither can thoſe properly be called Heads of the *Engliſh* Church, ſince the Supremacy lies in the King of *Great Britain*. But there are ſeveral other Churches govern'd by Primates,

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(a) See *Chambers* Cycloped. Art. Primate. (b) *Ibid.* p. 871. (c) *Commanville* Tab. Geogr. & Chron. des Archev. Eveq. p. 4.

mates, who are independent; as the *Georgians*, *Mingrelians*, and *Neſtorians*. Theſe Eccleſiaſtical Governors have the Title of *Catholicos*, which anſwers to Primate, tho' they are generally call'd by us Patriarchs. The Catholicos of the *Abyſſins*, called *Abuna* (that is, Our Father) is dependent on the Patriarch of *Alexandria*. (a)

Metropolitancy.] By Metropolitancy we underſtand the Juriſdiction or Poſſeſſion of a Metropolitan.

A Metropolitan is a Prelate who has the Superiority over the Biſhops of a Province; and if ſo called from having his Reſidence in the Metropolis or Mother City thereof, as the Word in the *Greek* imports.

The *Roman* Empire having been divided into 13 or rather 14 Dioceſes, as hath been already obſerved, and 120 Provinces, each Dioceſe as well as Province had its Metropolis or Capital City, and every Metropolis its Biſhops who had the Direction of Affairs, and the Pre-eminence over all the Biſhops of the Province. This Erection of Metropolitans is refer'd to the End of the third Century, and was confirm'd by the Council of *Nice* (b).

The *Greek* Emperors claim a Power of eſtabliſhing them from the Council of *Chalcedon*, which is the Reaſon of their being ſo numerous in the Eccleſiaſtical Notitia's (c).

Tho' the Eccleſiaſtical Government was modelled on the Foot of the Political, yet in *Gaul*, and ſome other Provinces, the Diſtinction of Metropolitan and Primate was not obſerved till very late. Moreover as the *Præfectus Galliæ* reſided alternately at *Treves*, *Vienne*, *Arles*, and *Lions*, he communicated the Rank and Dignity of Metropolitan and Primate to each of them in their Turn; altho' none of the *Gallican* Biſhops aſſumed the Rights or even the Precedence of Metropolitan before the fifth Century. *Du Pin* obſerves, that in the Provinces of *Africa*, excepting thoſe whereof *Carthage* was the Metropolis, the Place where the moſt antient Biſhop reſided became the Metropolis: The Reaſon of which without doubt was this, That neither the Proconſul nor Præfect ever fix'd their Reſidence: The ſame Author obſerves, that in *Aſia* there were Metropolis's meerly nominal, that is, which had no Suffragan, nor any Rights of Metropolitans. The Biſhops of *Nice*, *Chalcedon*, and *Berytus*, had the Precedence of other Biſhops, and Title of Metropolitans, without any other Right or Prerogative beſides the Honour of the Appellation, they themſelves being ſubject to their Metropolitans (a).

(a) See *Commanville* ubi ſupr. p. 303, 316, 353, 373. (b) *Chambers* Cyclop. Art. Metropolitan, p. 545. (c) *Commanville*, ubi ſupr. p. 170.

Metropolitan is an Order which takes Place properly only in the *Greek* Church, and the *Ruſſian* which is a Branch of it. In the *Latin* Church it is confounded with that of Archbiſhop.

Archbi-ſhop.

Archbiſhoprick is the Dignity of an Archbiſhop, or the Province under his Juriſdiction. An Archbiſhop in the *Greek* Church is under the Metropolitan; tho' they ſometimes alſo take the Name of Honorary Metropolitans, and are like Exempt Biſhops in the *Latin* Church, pretending to depend immediately on the Patriarch (b).

In the *Latin* Church, Archbiſhop and Metropolitan are the ſame Thing, and therefore often put one for the other; both Names being given to Prelates (c) who have the Biſhops of a Province as Suffragans under them; whence they take that of Archbiſhop, which ſignifies a Principal Biſhop, or Chief of Biſhops.

Archbiſhops were not known in the *Eaſt* till about the Year 320, and then it was only a Perſonal Honour, by which the Biſhops of conſiderable Cities were diſtinguiſhed without any Juriſdiction, or even Precedence in virtue thereof. It was not till of late, that they became Metropolitans, and had Suffragans under them. Among the *Latins*, *Iſidorus Hiſpalenſis* is the firſt who ſpeaks of Archbiſhops (d).

There are two Archbiſhopricks in *England*, the Prelates whereof are called Primates and Metropolitans.

There are no Archbiſhopricks which are Sovereignties, except in *Germany*, where there are four, *viz.* thoſe of *Cologne*, *Triers*, *Mentz*, and *Saltzburg*. The Archbiſhops of the three firſt, are Electors of the Emperor, and conſequently three of the principal Members of the *Germanic* Body.

Theſe Archbiſhops are elected by their Chapter depending on the Pope ſo far as concerns the Spiritual; but as Temporal Princes, they take their Inveſtiture from the Emperor.

(a) *Chambers* Cyclop. Art. Metropolitan, p. 545. (b) See *Commanville*, ubi ſupr. p. 170. (c) ibid. p. 4. (d) *Chambers* Cyclop. Art. Archbiſhop, p. 126.

Biſhoprick.] Biſhoprick is the Dignity and Juriſdiction of a Biſhop.

A Biſhop is a Prelate or Perſon conſecrated for the Spiritual Government and Direction of a Dioceſe, or the Pariſhes contained therein.

The Word comes from the *Saxon* Biſhop, and that from the *Greek* ἐπίσκοπος *Epiſcopus* an Overſeer or Inſpector, which was the Title the *Athenians* gave thoſe whom they ſent into the Provinces ſubject to them, to ſee whether every Thing was kept in Order; and the *Romans* gave the ſame Title to thoſe who were Inſpectors and Viſitors of the Bread and Proviſion. It appears from a Letter of *Cicero*, that he himſelf had a Biſhoprick, being *Epiſcopus Oræ & Campaniæ*, and alſo that the Word *Dioceſe* was uſed for the Extent of this Sort of Government.

In the *Latin* Church, there are ſome Biſhops who pretend to the Quality of Protothrones, that is, to have the Precedence among thoſe of their Province, not in virtue of their Antiquity but their See; notwithſtanding there are ſome whoſe Right herein is conteſted (a).

Biſhopricks are dependent on Archbiſhopricks; in *Germany* there are ſeveral which are Sovereignties, as hath been already obſerved.

Biſhopricks of *England* have all Baronies annexed to them; in virtue of which their Biſhops are all Barons and Peers, and ſit in the Houſe of Lords, or upper Houſe of Parliament, both as Barons and Biſhops, having Precedence of all other Barons. The Dean and Chapter elect the Biſhop, but the Nomination is in the King (b).

The Biſhop is the Root of all the Eccleſiaſtical Dignitaries, Patriarchs, Exarchs, Primates, Archbiſhops, and Metropolitans, being the ſame with regard to Order, and Originally as to Juriſdiction; till new Occaſions requiring new Meaſures, the Functions of the Epiſcopacy were divided, and the Biſhops diſtinguiſhed into Degrees.

A Biſhop differs from an Archbiſhop in this, that an Archbiſhop with Biſhops conſecrate a Biſhop, as a Biſhop with Prieſts ordain a Prieſt; that the Archbiſhop viſits a Province, as the Biſhop a Dioceſe; that the Archbiſhop convocates a Provincial Synod, as the Biſhop a Dioceſan one; and that the Archbiſhop has Canonical Authority over all the Biſhops of his Province, as the Biſhop over the Prieſts in his Dioceſe. (a)

(a) *Commanville*, ubi ſupr. p. 5. (b) See *Chambers* Cyclop. ubi ſupr.

SECT. III.

Of the Inferior Hierarchies, *Archdeacoury, and Deanary; alſo Parſonages.*

ARCHDEACONRY is the Juriſdiction of an Archdeacon, whoſe Buſineſs is to viſit the Pariſhes within a certain Diſtrict or Part of a Dioceſe committed to him. He is obliged to be in Prieſts Orders, and was originally the Chief of the Deacons, as the Name imports; but his Office ſoon got him the Upperhand over Prieſts, and even the Archimandrite or Rural Dean himſelf. He whoſe Diſtrict lay in the Capital City, took the Quality of Great Archdeacon. In the tenth Century Archdeacons were conſidered as having Juriſdiction in their own Right, with a Power of delegating it to others; but from that Time, Meaſures were taken to leſſen their Power by increaſing their Number. Many Archdeacons in old Foundations have by Preſcription their Courts and Officials as Biſhops have.

Heylin obſerves, that each Dioceſe in *England* has in it one or more Archdeaconries for diſpatch of Eccleſiaſtical Buſineſs: There are in all Sixty (b), which is not three to each Dioceſe.

Deanary.] Deanary is the Juriſdiction of a Dean.

A Dean is a Prime Dignitary in moſt Cathedral and Collegiate Churches, being uſually the Preſident of the Chapter, which was antiently the Biſhop's Council, and now his Aſſiſtants in Ordinations, Deprivations, &c.

Dean comes from the *Latin, Decanus,* which was applyed among the *Romans* to a Perſon who had command over ten Soldiers, and to a petty Judge of a Deanary; in imitation whereof the Prelates eſtabliſhed Judges to inſpect certain Parts of their Dioceſes, under Denomination of *Archipresbiteri, &c.* who were ſucceeded by *Decani,* or Deans, to whom the Appellation of Rural or Urban was added, as they belonged either to the City or Country.

(a) *Chambers* Cyclop. ubi ſupr. (b) ibid. Art. Archdeacon.

Theſe Rural and Urban Deans had a Diſtrict of ten Churches or Pariſhes, within which they exerciſed Juriſdiction, and were at firſt both in Order and Authority above the Archdeacons.

Every Archdeaconry in *England* is Subdivided into Rural Deanaries, few or more according to the Extent thereof; the Deans whereof were alſo called *Archipresbyteri*, and *Decani Chriſtianitatis:* They ſeem to have been the ſame with what in other Parts were called *Chorepiſcopi*. At preſent the Dean bears that Name, as being ſuppoſed to preſide over ten Canons or Prebendaries at leaſt; as the Deans in antient Monaſteries, had the Care of ten Monks under the Abbot (a).

A Deanary is the laſt Degree of Hierarchies: for a Parſonage, or Pariſh, is a Benefice which gives ſome Prerogative but no Juriſdiction; however it may not be amiſs to explain what belongs thereto.

Parſonage ſeems to come from *Perſona*, and to denote ſomething Perſonal or reſtrained to the Perſon; in as much as the antient Parſonages gave a Title of Honour, but no Power, to the Parſon or Pariſh Prieſt.

Parſonages are of two Sorts, Rectories, and Vicarages.

A Rectory or Rectorate is the Benefice of a Rector, or Parſon of a Pariſh, whoſe Tythes are appropriated, or belong to a Chapter, Religious Houſe, *&c.*

A Vicarage is the Benefice of a Vicar, or Parſon of a Pariſh whoſe Tythes are impropriated, or belong to a Layman, who receives them, and only allows the Vicar the ſmall Tythes, or a convenient Salary. The Vicar is ſo called *quaſi Vice fungens Rectoris*, as ſerving for, or in lieu of a Rector, who would be entitled to the great Tythes (b).

In the Presbyterian Church, there are no Hierarchies: In lieu of a Series of Miniſters one over another, their Polity conſiſts in a Series of Aſſemblies or Synods. Thus every Miniſter is to be obedient to the Claſs under which he lives, and that Claſs to a Synod Provincial, Claſſical, or Oecumenical.

Scotland, according to its Eccleſiaſtical Diviſion, is parted into 69 Presbyteries, each conſiſting of a Number of Pariſhes,

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(a) See *Chambers* Cycloped. Art. Dean and Rural Dean. (b) Id. ibid. Art. Parſonage, Rectory, Vicar.

not exceeding 24, nor leſs than 12, and denominated from the Chief Town where the Miniſters which conſtitute the Presbytery meet. (a)

SECT. IV.

Of the Religious Communities.

BEſides the Eccleſiaſtical Hierarchies, there are ſeveral Religious Communities in the *Latin* and *Greek* Churches, which fall within the Notice of Eccleſiaſtical Geography; as Chapters, Abbeys, Priories, and Commanderies.

Chapters.] 1. Chapters are certain Colleges or Aſſemblies of ſeveral Prieſts and Canons, that is, Regulars, on account of certain Rules which are preſcribed to them; the Chief of whom is ordinarily called a Dean. Theſe Chapters are of two Sorts: 1. Of Cathedral Churches, that is, ſuch as are the Sees of Archbiſhops and Biſhops: And, 2. ſimple Collegiate Churches, known by the Names of Deanaries, Treaſurorſhips, Prevoſtſhips, Chanteries; becauſe among the Heads of theſe Chapters ſome are called Deans, others Treaſurers, Prevoſts, Chanters, *&c.* The Vulgar alſo give the Name of Canonſhip indifferently to all the Chapters, on account of the Canons, whereof they are compoſed (b).

Abbeys.] 2. An Abbey is a Religious Houſe, either of Men or Women; the Men are called Monks, and governed by an Abbot *(A)*; the Women, Nuns, and governed by an Abbeſs; whence the Religious Houſes of the Men are called Monaſteries, and thoſe of the Women Nunneries; altho' both ſorts are indifferently called by the Names of Monaſteries, Cloiſters and Convents.

Abbeys are either *Regular*, that is, the Abbot thereof is of the ſame Order with the Abbey; or *Commendatory*, that is, are poſſeſſed by Lay-Men. Some Abbeys have been Seculariz'd, and changed into a Chapter and College of Canons, the Superior of which notwithſtanding takes the Title of Abbot (a).

(a) See *Chambers* Cycloped. Art. Presbytery. (b) *Sanſon* ubi ſupr. Chap. 6. p. 69.

(A) The Name Abbot comes from the *Latin* and *Greek Abbas*, formed of the *Hebrew Ab*, or rather the *Syriac Abba*, which ſignifies Father; a Name which being given by the Orientals to the Heads of Monaſteries, was afterwards adopted by the *Greeks*, and uſed indifferently with that of Archimandrite. The Name both of Abbey and Abbeſs became in Time a Title of Dignity, principally in *Europe*, as has been before obſerv'd.

Priory.] 3. A *Priory* is a Benefice, the Poſſeſſor whereof is call'd a Prior; which ſignifies the Firſt, or Chief, and differs from Abbot only in Name.

Priories are alſo Regular or Commendatory; the latter of which are either Conventual Priories, and are fill'd with Religious; or Simple Priories, becauſe they are without Monks.

There are what they call *Priory Cures*, that is, Cures bearing the Title of Priories: which comes from hence, that Cures formerly depended on ſome Abbey or Priory, and were ſerved by two or three Monks, whereof he who ſucceeded to the Cure took the Title of Prior; and there are ſtill ſeveral dependent Cures and Pariſhes of the Orders of *St. Auſtin*, and the *Premonſtratenſes*, the Duties of which are performed by Religious of the ſame Orders.

Commandery.] 4. By Commandery is not here to be underſtood all the Benefices which are in command, for in that Senſe, Abbeys and Priories which are in command are Commanderies; but only certain Benefices ſimply named Commanderies, whereof ſome have been erected into that Title for divers Sorts of military Knights, and others for ſome Orders of Religious (b).

(a) See *Sanſon* ubi ſupr. p. 70. (b) id. ib.

BOOK IV.

Treating of the Species *of the* Relative Claſs.

HAVING gone thro' the ſeveral abſolute Species of Hiſtorical Geography, we come now to the Relative Hiſtorical Species.

The Species of this Claſs ariſe from the Relation which they have to one another; wherein they differ from thoſe of the Abſolute Claſs, which reſpect the Diſpoſition and Diviſion of the Surface of the Earth.

All Geography may be conſider'd, either as belonging to ſome particular Nation, or having a Relation to ſome Period of Time; whence it may be divided into National and Periodical.

CHAP. I.

Of National GEOGRAPHY.

Defin.] NATIONAL Geography is a Deſcription of the Earth according to ſome particular Nation.

Diſtinct.] All the Species of Geography may be ſaid to be Branches of this, as every Nation has a Mathematical as well as Hiſtorical Geography; but we do not apply the Word *National* here as a Genus including the other Species, but rather as a Species (as it were) of Univerſal Geography, and meerly to diſtinguiſh the Geography of one Nation from that of another. For as every Nation has a Geography peculiar to itſelf, and different from any other, we think that Difference ought to be diſtinguiſhed by a particular Species, as well as the Natural and Political, Civil and Eccleſiaſtical Difference, which alſo give riſe to Species.

End and Uſe.] The End of National Geography is to exhibit the Earth according to the Idea or Knowledge which any Nation has of it. Nor is the Knowledge of the Geography of different Nations a matter of Curioſity only, but a Thing of great uſe to all thoſe who wou'd be acquainted with the State of Learning or Hiſtory of foreign Nations: but its Advantage extends much farther ſtill, ſince Geography can never be brought to Perfection without the joint Aſſiſtance of all Nations.

No ſingle Nation can ſurvey the whole Earth themſelves, and every Nation is beſt able to exhibit their own Dominions; ſo that by uniting the Geography of ſeveral Nations together, a more perfect Deſcription muſt ariſe than what poſſibly can from the Labours of any ſingle Nation.

Hiſt.] This Species of Geography not having been conſider'd as ſuch by former Authors, it affords but a barren Subject with reſpect to the literary Hiſtory. We meet with no Writers, Antient or Modern, who have attempted to give us a Syſtem of National Geography, that is, the Geography of different Nations in ſo many diſtinct Bodies; and indeed ſuch a Work, tho' neceſſary, as well as diſtinct Bodies of Periodical Geography, would ſcarce be practicable on account of the Labour and Expence: Thoſe therefore who wou'd be furniſhed with the Geography of different Nations, ought to procure their Maps and Syſtems in the Original Languages. It will be enough for the Geographer to incorporate the Geography of the ſeveral Nations together, by adding their ſeveral Diſcoveries and Improvements to thoſe of his own Nation, and inſerting the different Names of Places; which laſt is the Office of Parallel Geography.

Baſis.] This Species of Geography ariſes out of the Difference ſubſiſting between the Geography of different Nations. If the Geography of all Nations were in all reſpects the ſame, there would be no room for this Species; there would then be but one univerſal Syſtem common to all; but indeed the ſeveral National Syſtems not only differ, but differ greatly.

They differ not only with regard to the Figure, Dimenſions, Bounds and Diviſion of Countries, the Courſe of Rivers, Coaſts, Mountains, and Site of Places, but alſo as to the Extent or Quantity of the Earth comprized therein. The Geography of ſome Nations extends not beyond *Europe*, *Aſia* and *Africa*, like that of the *Perſians* and *Tartars*; that of others is confined almoſt wholly to their own Dominions: Such as the Geography of the Inhabitants of the further Peninſula of *India*, and ſuch was that of *China*, till of late.

This local Difference is owing to their more or leſs Skill and Care in improving Geography, and the Diſcoveries they have made, either accidentally or expreſsly, on account of Trade or Curioſity. 'Tis true this local Difference is not eſſential to the Geography of different Nations, for many Nations have the ſame Geography with regard to the Figure, Dimenſions and Situations of Countries, and all might have the ſame, if they did but communicate their Diſcoveries regularly to each other. But there is a Difference with reſpect to the Names of Places, which ſeems eſſential to the Geography of every Nation, and affects even the Geography of thoſe who have the ſame local Geography.

Thus the Country called by the Inhabitants *Teutſchlandt*, is in the Geography of the *Engliſh* called *Germany*; in that of the French *Almain*; by the Sclavonians *Niemiecka*; and by the Turks *Nemcheh Walâyeti*.

Tranſilvania is Named by the Germans *Sieben Burgen* from its ſeven Cities: *Poland* by the Turks *Lekh*, from the King of that Name. The Country by us called *Perſia*, is by the *Perſians* themſelves called *Irân*: That which in our Maps is named *Uzbek*, is by the *Perſians* called *Tûrân*, by the *Arabs Mawara'lnahr*, and by the *Uzbeks* themſelves *Great Bukhâria*. The *Uzbeks* call the *Aluth Mongols* or *Moguls*, *Kalmûks*; the *Moguls* call the *Uzbeks*, *Hâſſâk Pûrûk*; the *Manchew Tartars*, who at preſent reign over *China*, are called by the *Ruſſians*, *Bogdoi*; the Country called by us, from the Orientals, *Tibet* or *Tobt*, is by the *Indians* named *Bûtân*, by the *Tartars*, *Barantola*, and by the *Chineſe*, *Tſang*.

The great *Peninſula* facing *China*, which is named by the Natives *Kau-li-qua*, is in the *Chineſe* Geography called *Chau-ſyen*; in that of the *Manchew's*, or *Eaſtern Tartars*, *Solgon Koron*, and in ours *Korea*. *China* itſelf, is a Name unknown to the *Chineſe*, whoſe Country is called in the Syſtems of their own Geography *Chun-qua*, or the middle Kingdom; in thoſe of the *Manchew Tartars*, *Nikan Koron*; in that of the *Moguls*, *Katay*; from whence the *Perſians* and *Arabs* have their *Katay*, or *Kata*, and the *Ruſſians* their *Kitay*.

The great River paſſing thro' *Eaſtern Tartary*, and falling into the Gulf of *Kamchatka*, is called by the *Moguls*, who inhabit the Banks of it, *Onon*; by the *Manchews*, *Saghalian Ula*; by the *Chineſe*, *He-long-Kyang*; and by the *Ruſſians*, *Amûr*.

This Difference in the Names of the Geography of different Nations is owing to ſeveral Cauſes; as the Difference of Languages, and the Corruption of Names by Strangers; to retaining the old Names thro' Cuſtom, or want of knowing the new, and to a Humour each Nation has of impoſing Names, often Nick-names: Whereof Inſtances will be given when we come to treat of Parallel Geography.

In conſequence of this Nominal Difference, every Geographer in his Deſcription ought to give Places the Names in uſe with his own Nation, and not thoſe uſed by different Nations, except by way of Addition, which would be always very proper. It would be beſt, indeed, that the Names commonly uſed in every Country were univerſally received, and it would be proper to introduce them by degrees; but till that be done, Cuſtom ſhould be complied with, only when the Difference between the indigenous and the corrupt Name was not conſiderable enough to cauſe a Miſtake in the Reader.

Diviſ.] This Species of Geography is diviſible into as many ſubordinate Species, as there are Nations who cultivate, or have any Syſtem of, Geography.

National Geography therefore may be divided into *Britiſh*, *Dutch*, *German*, *French*, *Spaniſh*, *Ruſſian*, *Turkiſh*, *Arabian*, *Perſian*, *Indian*, *Tartarian*, *Chineſe*, and the like. Accordingly we ſay, This is a Body of *French*, *Spaniſh*, *Turkiſh*, or *Chineſe* Geography, as well as, This is a Body of Antient and Modern Geography. 'Tis true, we do not uſe the Expreſſion, *This is a Body of National Geography*, when applyed to the Geography of any ſingle Nation; but it is very proper when applyed to that of ſeveral Nations together. It would carry us too far, ſhould we enter into a Detail relating to the Geography of different Nations, which is a very copious Subject; and therefore, for the preſent, hope the Reader will be content with the little that has been already ſaid upon that Subject, p. 10. &c.

National Geography may be exhibited, like the other Species, by Globes, Maps, Treatiſes, and Tables; tho' all Nations who cultivate or have a Geography, do not make uſe of the firſt and laſt, particularly the *Indians* of *America*.

CHAP. II.

Of Periodical GEOGRAPHY.

Defin.] PERIODICAL Geography conſiders the Geography of any Nation at any particular Period of Time.

Diff. This Species differs from the former, as it conſiders the Geography of the ſame Nation at different Times; whereas National Geography conſiders the Geography of different Nations at the ſame Time: The one has to do with the Geography only of the ſame Nation; the other with the Geography of ſeveral Nations.

End and Uſe.] The End of Periodical Geography, is to exhibit the State of the Earth at any Time paſt or preſent. This Species is not only of uſe to inform us of the ſeveral Changes and Alterations that happen in Countries from time to time; to point out the gradual Growth, Extent and Decay of Empires, Kingdoms, and other Dominions Temporal and Spiritual; in ſhort, to ſhew us any State either exiſting at preſent, or extant in its ſeveral Stages from its Origin to its Fall: But it is even abſolutely neceſſary for underſtanding the Hiſtories of different Times, which, without the Aſſiſtance of this ſort of Geography, wou'd be in a great meaſure unintelligible. Beſides, ſince the Names of *Byzantium*, *Ælia*, *Peluſium*, *Eboracum*, and the like, have long ago ceaſed, how ſhould we know, but for the Geography of different Ages, that the Places are ſtill in being tho' under different Names?

Hiſt.] Periodical Geography, for any thing that appears, has been but little cultivated till of late Ages. The *Greeks* *Romans*, being ignorant of the Geography of any of the Nations more antient than themſelves, or diſdaining to make uſe of it, minded none but their own; which was pretty uniform, as the Changes in the Parts of the Earth under their Dominion were not many or frequent before the Time of *Conſtantine*. It was no great Labour therefore to them to ſettle the Geography of the ſeveral Periods of their Empire, which differed from each other, more with reſpect to the Quantity than Quality. But it does not appear they took any Pains that Way: On the contrary, the Modern *Europeans*

ropeans, who cultivate their Learning, and have made their Geography and Hiſtory as it were a Part of their own, have employed no ſmall Labour in exhibiting the Geography of different Ages, and have illuſtrated many of the Geographical and Hiſtorical Works of former Times by Maps, or Comments adapted to them.

Baſis.] This Species of Geography ariſes from the Difference which appears in the Geography of the ſame Nation at different Times, with reſpect to its Extent, the Diviſions and Bounds of Countries, the Courſe of Rivers, Mountains, Coaſts, and the Situation and Names of Places.

Local Diff.] The Local Difference is owing to ſeveral Cauſes. People and Nations have migrated from one Country to another; petty States, and even ſingle Cities, like *Rome*, have by degrees enlarged their Bounds, and acquired mighty Empires; mighty Empires and Kingdoms have been reduced to their primitive Bounds, like the *Arabian* and *Tartarian*, or entirely deſtroyed, like the *Greek* and *Roman*; Kingdoms have been divided differently at different Times, like *England* under the antient *Britains*, the *Romans*, *Saxons*, and *Normans*; States have been tranſformed from Monarchies into Republicks, as the *Athenian* and other Kingdoms, and from Republicks to Monarchies again, as the *Roman* Empire. As to particular Cities, Towns, Fortreſſes, Walls, and other Places, they are daily changing: Some are enlarging, others going to decay; ſome founded, like the *Alexandrias*, *Seleucias*, *Apameas*, &c. of old, and of late Years *Peterſburg* one of the Capitals of *Ruſſia*; others deſtroyed, as *Nineveh*, *Babylon*, and *Carthage*, inſomuch that the particular Spots where they were ſituated are unknown. Nor has the Natural Face of the Earth, tho' not ſo liable to ſuffer Alterations as its Political, entirely eſcaped the Injuries of Time and Accidents.

Continents and Iſlands have been ſeparated, which before were joined, as *Europe* from *Africa*, *Aſia minor* from *Thrace*, *Sicily* from *Italy*, by the Diſruption of the Iſthmus which joined them, cauſed by Earthquakes. Several Parts of the Earth have become dry Land, which before were overflowed; as *Theſſaly* of old, the Country between *Kharax* and the *Perſian* Gulf (a); all *Holland*, *Zeland*, and *Gelderland*; *Pruſſia* alſo, and the adjacent Countries daily become larger by the

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(a) Vid. *Strab.* Geogr. l. 1. (b) Plin. Hiſt. Nat. l. 6. c. 27.

Sea's retiring (a). On the other hand, Parts have been overflowed by the Sea, which before were dry Land; as of old the great Iſland *Atlantis*, greater than *Aſia* and *Africa*, according to the Report of the *Egyptian* Prieſts to *Solon* (b); and not long ago part of *Frieſland*; *Veneta*, a famous Sea-port in *Pomerania*, was drowned by the breaking in of the *Baltic* Sea, and that in all probability will be the Fate of *Holland* ſome time or other.

Several ſmall Lakes, particularly in *Holland*, have been dryed up or drained, as well as Bogs and Marſhes in *Weſtphalia*, *Gelderland*, *Brabant*, *Holland*, *Ruſſia*, *Ireland*, and many other Countries. Nay, the great *Palus Mæotis*, or Sea of *Azof*, in all likelyhood will become dry Land; it growing ſhallower and ſhallower by the daily Acceſſion of Mud and Sand brought into it by the Rivers, nor will it bear ſuch large Ships now, as ſailed upon it 60 Years ago.

The Channels of Rivers alſo have been dryed up, like ſome belonging to the *Nile*, and that Branch of the *Rhine* which formerly ran by *Leyden*. Others have forſaken their old Courſe, and taken a new one; thus the Northern Branch of the famous *Oxus*, at preſent called *Jibûn* and *Amû*, which formerly paſſing by *Urgenz*, (the Capital of the Kingdom of *Khurzem*, or *Khowarezm*) fell into the *Caſpian* Sea, about 90 Years ago forſook that City and taking its Courſe Northwards, fell into the River *Kheſel*; the Stream of which laſt River falling alſo into the *Caſpian* Sea, the *Uzbek Tartars*, in the Year 1719, turned into the Lake of *Aral*, in the Northern Borders of that Country (c).

Other Changes have happened in the Surface of the Earth, as the Appearance of new Iſlands, Mountains, Rivers, Lakes, that never were before.

Nominal Difference.]

A Change in the Names of Places commonly attends the other Changes.

The *Romans* gave new Names to the Provinces into which they divided *England*. The *Saxons* gave different Names to the Kingdoms of their Heptarchy, and the Shires or Counties took Names different from them.

The building of *Boſton*, *Cambridge*, *Philadelphia*, and other Cities in the *Britiſh* Dominions in *America*, and lately *Peters-*

(a) Vid. Varen. Geog. Gen. Part 1. Sect. 4. Ch. 18. (b) Plat. in Timæo. (c) See Gen. Hiſt. of *Turks*, *Mogols*, &c. Vol. 2. Ch. 2. p. 447. & ſeqq.

Peterſburg in *Ruſſia*, have added ſo many new Names to Geography. On the Conqueſt of *Canaan* by the *Jews*, the Name of *Jebus* was changed into *Jeruſalem*; which afterwards took the Name of *Ælia Capitolia*, from *Ælianus Adrianus* the *Roman* Emperor, as *Byzantium* did that of *New Rome*, and that of *Conſtantinople* from the Emperor *Conſtantine*. It is cuſtomary in *China* for the firſt of every new Family who obtains the Empire to change the Names of all the principal Cities; thus the Capital of the Province of *Ho-nan* was by one Family named *Kyau*, by another *Taſ-kang*, by a third *Pyen-hû*, a fourth called it *Lyang-chew*, a fifth *Nan-king*, by a ſixth Family it was named *Pyen-lyang*, and by a ſeventh *Kay-fong-fû*, which it bears at preſent.

Pe-king, the preſent Capital of *China*, was by one Family called *Su*, by another *Yew*, by another *Fa ni yang*, by a fourth *Yin ſhan*, by a fifth *Yen-king*, by a ſixth *Shun tyen*.

Diviſion.] As the ſeveral Parts of the Earth have been affected with the abovementioned Changes in different Times and Degrees; ſome later, ſome ſooner, ſome at one time, ſome at another, ſome more and ſome leſs, according as Revolutions and the other Cauſes of thoſe Changes were more or leſs frequent; conſequently, the Chorography and Topography of each Country or City will have its peculiar Periods diſtinct from every other.

But as Geography, which conſiders the whole collectively, requires one uniform Diviſion, Authors have divided it, in reſpect of Time, into *Antient*, *Middle*, and *Modern*. The Difficulty is to find out ſuch Periods as may ſuit all Parts of the Earth alike, in regard ſome Countries have been perfectly free from Changes, at the ſame time others have ſuffered them; whence Authors differ in ſettling the Limits of the ſeveral Periods. But, indeed, it matters not much where the Periods are fixt, ſo that Geographers would but agree in one Opinion, and not confound Periodical Geography by various Temporary Diviſions, as they do Longitude by chooſing Different Meridians.

This however is to be underſtood of Nations who have the ſame Geography in common: For every different Body of Geography, ſuch as the *European*, *Turkiſh*, *Perſian*, *Tartarian*, *Chineſe*, or *Abyſſinian*, will neceſſarily have different Temporary Diviſions; in regard the Geographers of every Nation are apt to regulate the Periods according to the Changes that have happened in their reſpective Countries.

Rules.] As this Species of Geography is of great Importance, and has not been treated expreſsly by any Author hitherto, it may not be thought ſuperfluous, before we proceed to the particular Branches of it, to give a brief Account of the Rules or Directions which *Juncker* ſets down to be obſerved in treating of the Middle Geography of *Germany*, and may ſerve indifferently for all other Countries in general.

1. The Geography of the Middle Age, to begin at the Diviſion of the Empire made at the End of the fourth Age by *Theodoſius* the Great, and end in the Reign of *Maximilian* the firſt, who at the beginning of the ſixteenth Age divided the *Roman* Empire into Circles.

2. That the Incurſions of the Barbarous Nations into the *Roman* Provinces firſt gave occaſion of changing the Geography.

3. That there are various Periods of this Geography, thoſe Nations being at one time Conquerors, at another conquered.

4. That to avoid Errors, it is abſolutely neceſſary to regulate the Geography of each Kingdom and Province according to ſuch Revolutions or Periods.

5. That without nicely diſtinguiſhing the Migrations and Continuance of Nations in Countries, an Author muſt needs fall into many Errors.

6. That ſuch Nations on ſeizing the Provinces, whether by Force or Colonies, either quite changed the Names of them by introducing new, or built new Cities and Towns, to which they gave Names of their own: They alſo either wholly aboliſhed the *Roman* Laws and Cuſtoms, or mix'd their own with them.

7. That in the Eaſtern Parts of the *Roman* Empire regard is chiefly to be had to the Migrations of the *Thracian* Nations; in the Weſtern Part, to the Incurſions of the Northern People.

8. That the Diviſion of the *Roman Empire* made by the Sons and Grandſons of *Charles* the Great introduced a great Change in Geography.

9. That the like happened on tranſlating the Imperial Dignity from the *Carolines* to other Princes of *Germany*.

10. That the erecting of Dukedoms and various Counties in *Germany* muſt be carefully attended to.

11. That the erecting of Biſhopricks and Abbeys is of like Moment alſo.

12. That Cities, Towns, Rivers, Mountains, &c. for the moſt part retain their antient Situations, but have changed their Names; the Original of which Changes is to be ſought in the ſeveral Languages of the Inhabitants and their Dialects.

13. That there is a great Difference in the old Manner of pronouncing and writing thoſe Names in the *Latin*; which occaſions many Difficulties.

14. That there are few Nations mentioned from the 5th to the 9th Age whoſe Names are ſtill extant.

15. That the Diviſion of the Provinces into *Pagi*, is now every where layed aſide.

16. That ſeveral Countries, formerly very famous, have in latter Times been converted into Principalities, and their Names ſuppreſſed.

17. That Counties took their Names from Caſtles, wherein chiefly the Counts reſided; the Counties being granted to them and their Heirs, the Appellation of *Pagi* ceaſing.

18. That thoſe Counties and leſſer Provinces which became feudatory to the Dutchies, Principalities, and greater Churches, made a conſiderable Change in Geography.

19. That *Germany*, and the Appendages of its Empire, was formerly of larger Extent than at preſent.

20. That the Confuſions which reigned in the *German* Republic at length moved the Emperor *Maximilian* I. to divide the whole into certain Circles: which wholeſome Regulation *puts an End to the Geography of the Middle Age*, and gives a *Beginning to the Modern*.

21. That the moſt proper Way of treating this Species of Univerſal Geography is, (1) To mark the Names and Settlements of the moſt remarkable Nations from the firſt Age after Chriſt to the fifth. (2) To ſpecify the Names and Fortune of thoſe Nations, which entered the *Roman* Provinces any where in the fourth and following Ages, by which means the Antient and Middle Geography, as well as Hiſtory, will be connected. (3) To ſet down the Names of the Mountains, Rivers, and Woods of *Germany*, in the *Latin* and *German* Languages, as uſed both in the Middle and Preſent Age. (4) To give an Index of all the Kingdoms, Dukedoms, Counties, Pagi, *&c.* belonging to *Germany*. (5) To explain the obſcure Words which occur. At the ſame time this is doing, the Bounds and internal State of *Germany* are to be conſidered before and in the Time of *Theodoſius* the Great: Alſo what they were in the Time of *Charle-*

main and his Grand-Children; thence to *Rodolph* of *Hapsburg*, and ſo on to *Maximilian* I. Moreover an accurate Account is to be given, under each Kingdom and Province, of its Origin, Progreſs, and Decay.

22. That it is neceſſary to ſet forth what Dutchies, Counties, and Pagi pertain to the Poſſeſſions of the Electors, Dukes, Counts, and Churches.

23. That the Writers of the Middle Age ought to be choſen with a good deal of Judgment (a).

Theſe Rules are illuſtrated by the Author with Inſtances and Remarks. The whole Work deſerves to be tranſlated into other Languages, and read by thoſe who wou'd treat of Geography.

CHAP. III.

Of Antient GEOGRAPHY.

ANtient Geography conſiders the Surface of the Earth, according to the ſeveral Changes therein, during the firſt Period of Time.

Among *Europeans*, ſome under Antient Geography comprize all before the Age of *Conſtantine the Great*, in the Fourth Century (b); others carry it as low as *Charlemain*, in the Ninth Age, dividing it into Two Parts, whereof the firſt, which they call moſt Antient, ends at the Birth of Chriſt (c). For our Parts, we ſhould chuſe to terminate Antient Geography at the Deſtruction of the Weſtern *Roman* Empire, about the Middle of the Fifth Century, or at the Riſe of the *Mohammedan* Empire, in the Beginning of the Seventh Age; at which Periods very conſiderable Changes happen'd in the State of Countries.

End and Uſe.] The Uſe of Antient Geography, is to render the reading of Antient Hiſtorians, and other Authors, who frequently mention Countries and Places exiſting in their own Times, or the Ages preceding them, intelligible. Without

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(a) See *Junck.* Anleitung Zu der Geogr. der Mittleren Zeiten, Part I. Ch. II. ap. Act. Erud. Tom. 36. p. 371. and Mem. of Liter. Vol VI. p. 296. & ſeq. (b) Vid. *Cellar.* Geogr. Antiq. Pref. & *La Martin.* Grand Dict. Geogr. Pref. p. 17. (c) Vid *Junck.* Lin. Prim. Erudit. Part II. p. 184.

out ſuch a Help, who would know that *Caerefroek*, or *Eboracum*, was *York*; *Byzantium*, *Conſtantinople*; and the like? And without that Knowledge, what Satisfaction could the Reader receive from the Hiſtory? But we cannot agree with a learned Author in ſaying, *That Antient Geography is of no uſe at preſent, except for underſtanding the Writings of the Antients; and that it belongs only to the Learned, and chiefly to Philologers* (a); for it is of uſe to be acquainted with the State of the Earth in antient Times, as well as at preſent, and to view the ſucceſſive Changes in Places. The Antient Geography alſo is of conſiderable Uſe in adjuſting the Situations of a great Number of Places, in which reſpect it often helps where the Modern fails (b); beſides, it is of Uſe conſider'd only as it is an eſſential Part of a Science, which would be imperfect without it.

Hiſt.] Wars and Revolutions having from time to time deſtroy'd the Literary Monuments of moſt Nations; none of them, for any thing that yet appears to us, have preſerved their Antient Geography, if they had any, excepting the *Chineſe*, *Jews*, *Greeks* and *Romans*. But the two laſt having extended their Dominions over a conſiderable Part of *Europe*, *Aſia* and *Africa*, communicated their Geography, with the reſt of the Sciences, to the Nations they ſubdued: Many of whom, particularly thoſe of *Europe*, ſubſtitute it at preſent as their *Antient Geography*; while others, who never bore the *Roman* Yoke, as the *Swedes*, with the reſt of the Inhabitants of the North, have adopted it in imitation of their Neighbours, for want of an Antient Geography of their own. For the ſame reaſon ſome of the *Aſiatic* Nations, as *Arabs*, *Perſians*, *Turks* (c) and *Armenians* (d), borrow ſomething this Way from the *Greeks*: But none of them have cultivated this Species of Geography ſo ſedulouſly as *Europeans*; who, beſides commenting the Antient Geographers and Hiſtorians, have compiled Syſtems of Antient Geography, both of the Repreſentatory and Explanatory Kinds. And hence ariſes a Diſtinction between Antient Geography and Antient Geography: one Sort being the Works of the Antients themſelves, tranſmitted down to us, ſuch as the Geographical Treatiſes of *Pliny*, *Mela*, *Strabo*, *Ptolomy*, &c. with the Maps of *Agathodæmon* added thereto, alſo the *Peutingerian* Tables or Maps of *Roman* Roads; the other ſort of Antient Geography is that which the Moderns have compoſed out of the Works of the An-

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(a) Vid. *Conring*, Epiſt. 59. p. 412. (b) See Conſtr. Globes and Maps, Append. p. 155. (c) See *Renaud*, Ant. Relat. Pref. p. 27. (d) Vid. *Moyſ. Chorenenſ.*

Antients, ſuch are the antient Globes and Maps of *Ortelius*, *Mercator*, and their Improvers *Hondius*, *Janſſon*, *Sanſon* and his Copiers, the Treatiſes of *Bertius*, *Cluverus* and *Hornius*, under the Title of Introductions, with ſeveral others; but the beſt, or indeed only good Treatiſe of Antient Geography hitherto, is the *Geographia Orbis Antiqui*, written by *Chriſtopher Cellarius*, with Maps of his own adapted to it: To which we may add, the *Theſaurus Geographicus* of *Ortelius*, and the *Geographia Sacra* of *Carolus a S. Paulo*; all the reſt are too ſuperficial, beſides being very incorrect.

State. Antient Geography is very imperfect and incorrect, for want of Diſcoveries and Celeſtial Obſervations. The *Greeks* and *Romans* knew little or nothing beyond the River *Ganges* Eaſtward, the *Fortunate* or *Canary* Iſlands Weſtward, 63 Deg. of Latitude Northwards, and 16 Deg. 25 Min. below the Line Southward: So that all the North Part of *Europe* and *Aſia*, with the *Arctic* Lands, the Eaſtern Parts of *Tartary* and *China*, and the Southern Part of *Africa*, were unknown to them, beſides *America*, and the Oceans ſurrounding the ſeveral Continents, with the Iſlands belonging to them. Neither did they make any exact Obſervations of the Latitude, except a very few, and none at all of the Longitude, their Obſervations being very inaccurate, and very groſs This Inaccuracy found in the Antient Geography, renders it very obſcure, and difficult to be underſtood by the Modern *Europeans*: for having neglected the Cultivation of it for near 1000 Years together, in which Space great Changes have happened in the Temporary State of Places, their Names, Bounds and Diviſions, they are at a loſs where to look for them, for want of having their exact Situations to direct them. Hence Authors differ ſo much in determining which are the Places that formerly went by the Names of *Thule*, *Taprobana*, *Ecbatana*, *Hecatompolis*, &c. and where *Babylon*, *Seleucia Parthorum*, *Perſepolis*, and many other Places that have been long ſince deſtroy'd.

Every Body knows how hard it is on theſe Accounts to explain *Ptolomy*, or even point out the Antient Names of a very few Cities in ſome Countries, as *Perſia* and *Arabia*, much leſs in the Parts farther off. For the ſame Reaſon it ſeems next to impoſſible to ſettle the Geography of the *Jews*, particularly with regard to *Paleſtine*, which has ſuffer'd more Alterations than moſt other Countries; and hence, doubtleſs, it is, that *De l'Iſle*, leſs venturous than *Sanſon* and other former Geographers, hath made no particular Map of that Part of *Syria*. In a Word, two Parts in three of the Antient Geography are at preſent uſeleſs.

If the Geography of any Nation be free from thoſe Inconveniences, it is that of the *Chineſe*, who have carefully noted the ſeveral temporary Changes that have happen'd to Places: But this is only to be underſtood of the Parts within their own Dominions; beyond which, as we have already obſerved, their Geography does not extend.

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CHAP. IV.

Of *Middle* GEOGRAPHY.

Defin.] MIddle Geography, or the Geography of the Middle Age, conſiders the State of the Earth under its ſeveral temporary Changes, during the 2d Period of Time.

This Period, according to *Juncker*, is bounded between the Reign of *Charlemain*, in the beginning of the 9th Century, and that of the Emperor *Maximilian* I. who divided *Germany* into Circles in the beginning of the 16th Century (a); others extend it from the Age of *Conſtantine the Great* in the 4th Century, to the Taking of *Conſtantinople* by *Mohammed* II. Emperor of the *Othman Turks*, about the middle of the 15th Century (b), with which alſo we cloſe our Period, beginning from the Deſtruction of the *Roman* Empire in the 5th, or Riſe of *Mohammediſm* in the 7th Century: and this the rather, becauſe at that Juncture *Geography* began to revive among the *European* Nations.

End.] The Uſe of Middle *Geography*, is the ſame with that of Antient; namely, to give a View of the State of the Earth during the Middle Ages, and render the Hiſtories of thoſe Times intelligible.

Hiſt.] After the Fall of the *Roman* Empire, *Geography* ſeems to have been cultivated with ſome Vigour by the *Goths*, or at leaſt to have loſt no Ground: As appears from *Jornandes*, who ſays in his Time innumerable Writers were extant, who explain'd the Poſitions of Places, and Dimenſions of *Europe*, *Aſia* and *Africa* (a); and from the great Number of them quoted by the Geographer of *Ravenna* in the 7th Age: But none of them, excepting his own, have come down to us. In ſhort, from his Time we meet with no *Geographical* Work before that of *Euſtathius*, Biſhop of *Theſſalonica*, who lived about the Year 1183, and wrote Notes on the *Periegeſis* of *Dionyſius Afer*; nor afterwards, till the Revival of Learning in the Weſt of *Europe* in the 15th Century, where we begin our Modern Period, unleſs we may call the *Geography* of *Al Edriſi* our own. So that, as a judicious Hiſtorian obſerves, in the 13th Century they ſtudied *Geography* out of the Books of the Antients: As if the World had not changed ſince the Times of *Pliny* and *Ptolomy*, and that the Places named in the Scripture were to be found in his Tables of *Paleſtine*, and the reſt of *Aſia* (b); but this they were in a good meaſure forced to do for want of Authors.

(a) Vid. *Junck.* ubi ſupr. (b) Vid. *Cellar.* & *La Martine.* ubi ſupr.

Hence it appears, not only that the great Numbers of Geographical Works extant at the Beginning of this Period were deſtroy'd, but from thenceforward *Geography* loſt Ground, inſtead of improving. The *Europeans* were ſo far from making new Diſcoveries, and Aſtronomical Obſervations, that they loſt the Knowledge, of moſt other Parts of the World, which they had before.

In the Thirteenth Century they ſeem to have been perſuaded, that there was no travelling beyond the Mountains of *Nubia*; and that the Head of *Nile*, known in the Time of *Coſma* the Monk, 730 Years before, was inveſtigable (c); nay, in the Fifteenth Age, where this Period ends, their Travellers tell us, that the Source of that River was ſought for in the *Indies*, and that beyond this Country there were no Inhabitants (d). 'Tis true, towards the End of the Thirteenth Age, Grand *Tartary*, and the Northern Parts of *China* began to be diſcover'd by the Travels of ſome Monks, and the famous *Marco Polo*; and in the Fourteenth, the *Venetians* began to reſort to the *Indies* by Land. But theſe Diſcoveries made but very little Improvement in the *Geography* of this Period, as appears by the poor deformed Map of the World, and the Deſcription of it, made by *Marinus Sanutus* about 1310. as alſo that of the *Holy Land*, and Coaſts of *Aſia Minor*, *Syria*, and *Ægypt*, by the ſame Author, all publiſh'd by *Bongarſius* (a). As for Obſervations of the Latitude and Longitude, we meet with none at all throughout this Period.

(a) *Jornand.* de Getic. Gent. Orig. in init. p. 79. (b) *Fleuri* Hiſt. Eccleſ. Tom. 17. Diſc. 5. (c) Vid. *Brocard's* Deſcr. Terr. Sanct. Cap. penult. (d) Vid. *Bredenbach*, Peregrin. p. 139.

For want therefore of Geographers, we muſt have recourſe to the Hiſtorians and Chronologers, which are pretty numerous throughout this Period; whereof the *Byzantine* Hiſtorians, and Writers of the *Cruſade*, or Holy War, are of greateſt Uſe with regard to the Countries out of *Europe*. But as none of them have given a connected and regular Account of Places in a Geographical Manner, excepting *Procopius* now and then, the *Geography* of the *Middle Age* ſeems to be more imperfect, knotty and obſcure, than the *Antient* itſelf.

Theſe Defects of the *Middle-Age Geography* are owing chiefly to two Cauſes; 1. The Interruption of Commerce and Foreign Travel in the Weſtern Parts of *Europe*, occaſion'd by the Diſſolution of the *Roman* Empire, and the long Wars, which for ſeveral Ages after diſtracted thoſe Countries. 2. The great Decay of Learning throughout this Period, eſpecially among the Weſtern Nations, from the Ninth Age downwards, occaſion'd partly by the Deſtruction made of the Literary Monuments in the Wars, partly by the Tyranny and Licentiouſneſs of the Clergy every where, and partly by the Schiſm between the *Greek* and *Latin* Churches in the Ninth Century (A).

But while *Geography* was in a manner quite abandon'd by the Weſtern Ages, it was cultivated with great Vigour thro' the whole Courſe of this Period by the Orientals. The *Arabs*, who at the beginning of their Conqueſts diſcover'd an Averſion for Learning, and deſtroy'd all the *Perſian* Records as well as the Remains of the famous *Alexandrian* Library, about the Year 825, began to cultivate the Sciences in conjunction with the *Perſians*. The ſame Zeal for Learning inſpired the *Turks*, *Moguls* and *Tartars*, who ſucceeded them in Empire. As for the *Chineſe*, they had cultivated the Sciences continually for ſeveral thouſand Years before.

(a) Vid. Geſt. Dei per *Franc.* Tom. 2. ap. fin.

(A) The Hatred of the *Latins* was ſuch, that they choſe rather to take the *Greek* Authors ill tranſlated into *Arabic* (and worſe rendred back into *Latin*) from the *Arabs*, than from the *Greeks* themſelves, till after the Fall of the *Greek* Empire, when many of that Nation flying, ſubmitted to the *Latins*, who by that means were ſoften'd, and receiv'd the *Grecian* Learning (*a*).

(*a*) Vid. *Voſſ.* de Emend. Longit. ap. Var. Obſ. p. 147.

Beſides a great Number of Maps, Tables and Treatiſes, to be found among the Antients, their Hiſtories afford conſiderable Materials for *Geography*; moſt of thoſe of Note being furniſh'd with Geographical Indexes, giving an Account of the Places mention'd in the Work itſelf. Their Tables are compiled after *Ptolomy*'s Method, exhibiting the Longitude and Latitude of Places; whereof thoſe of *Naſir addin* and *Ologh begh*, which are reckon'd the chief, have been publiſh'd in *England*, with a *Latin* Verſion; alſo Part of *Abu'lfeda*'s (*A*). Of their Treatiſes, we have yet only a Tranſlation of the Abridgment of *Al Edriſi*, commonly call'd the *Nubian Geographer*; which is more uſeful, as it is written in the itinerary Form, as moſt of the reſt are, eſpecially thoſe under the Title of *al Maſſâlik wa al Mamâlik*; that is, Roads and Kingdoms (*B*).

By means of the Oriental Authors, we augment our *Middle Geography* above two Parts in three. The *Arabs* extended their Dominion in *Aſia*, Weſtward as far as the *Mediterranean*, and one third of *Anatolia*; Eaſtward to the River *Indus*; Northward to Mount *Caucaſus*, and the River *Sihûn*, or *Sîr*, bounding Great *Bukkâria* on the North. In *Africa*, they poſſeſs'd all *Ægypt*, and the *Barbary Coaſt*, as far as the *Streights* of *Gibraltar*; not to mention *Spain*, and their Diſcoveries along the Eaſtern Coaſt of *Africa*, as far as *Sofala*. The *Mogols* and *Tartars*, by their Irruption under *Jenghiz Khân*, in the Thirteenth Century, made known all that vaſt Country from End to End, commonly call'd from the latter *Grand Tartary*. The *Chineſe* furniſh exact Chorographies of their own Dominions; from whence the *Atlas Chinenſis* of *P. Martini* was extracted.

The Orientals alſo have determined the Situations of a conſiderable Number of Places in their reſpective Dominions during this Period, chiefly as to Latitude; tho' but few of their Obſervations have yet come to our Hands.

(*A*) No leſs than five or ſix Tranſlations have been made of *Abu'lfedas's* Geography call'd, *Takwim al Boldan*, but none of them has been publiſh'd; Mr *Gagnier* has lately propoſed a new Verſion.

(*B*) The chief Authors who have given that Title to their Works, are, *Ebn Hawkal*, *Ebn Khordadbeba*, *Mahlabi*, *Marrakeshki*, and *Al Edriſi*; the entire Geography of which laſt, with a *Latin* Verſion by the famous Dr *Pocock*, is in the *Bodleian* Library.

The Difficulty of ſettling the *Middle Geography*, for the Reaſons aforeſaid, has caus'd it to be neglected, till of late, that ſome Authors have publiſh'd Maps and Treatiſes relating to the State of particular Countries, particularly *England*, *Germany*, *France* and *Italy*, during this Period of Time. We have no intire Body of *Middle Geography* by a Modern Author, excepting that of *Chriſtian Juncker*; but it is written in *German*, and treats more expreſly of *Germany* (*A*). *Chr. Cellarius*, ſo famous for his *Antient Geography*, promiſed to give a Treatiſe for the *Middle Age*, and proceeded a good Way in it, but did not live to finiſh the Work. This is a greater Loſs, becauſe, as *Juncker* obſerves, we want a commodious Compend or Introduction, from whence the Rudiments of this Species might be learned; and to put others in a Way to ſtudy or write on this Subject, by pointing out the beſt Authors, and the moſt remarkable Changes that have happen'd in every Country within this Period. In the mean time, his own curious Work may ſerve for a Directory, as to the Things to be conſider'd in a *Periodical Geography*; and what we have already ſaid may be of uſe, as to the Object and Materials of *Middle Geography*, conſidering that of the Orientals, which yet makes ſo conſiderable a Part of it, ſeems not to come within the Plan either of *Juncker* or *Cellarius*, who apparently have confined their Reſearches to the *European* Writers. And, indeed, the *Oriental Geography* has been almoſt altogether neglected hitherto by *Europeans*, as ſhall be more fully obſerved in the next Chapter.

CHAP. V.

Of Modern GEOGRAPHY.

Defin.] *Modern Geography* conſiders the State of the Earth during the Third Period of Time; tho', ſtrictly ſpeaking, it hath relation only to its preſent Condition.

This

(*A*) This Work is entitled, *Anleitung zu der Geographie der mittleren Zeiten*; that is, *An Introduction to the Geography of the Middle Age. Jena*, 1712, in 4to, pp. 659. The Author is Hiſtoriographer to the Duke of *Saxony*, Rector and Librarian of the College of *Iſenac*, and Member of the Royal Academy of Sciences at *Berlin*. He wrote the *Primæ Lineæ Eruditionis*, and other Pieces.

This Period begins, according to ſome, in the Sixteenth Century, when the Emperor *Maximilian* divided *Germany* into Circles; but more properly, according to others, in the Fifteenth Century, when *Conſtantinople* was taken by the *Turks*, and *Geography* began to revive in *Europe*, as was obſerved in the laſt Chapter.

End.] The End of this Species is to exhibit the Surface of the Earth, according to its preſent Diſpoſition; to aſſiſt Modern Hiſtory; and render the *Antient* and *Middle Geography* more perfect, by the Improvements which they received therefrom. This is to be underſtood chiefly with regard to Diſcoveries, and Aſtronomical Obſervations: By which means the Situations of Places, determined not at all, or but inaccurately, formerly, will be ſupplied and rectified; and the *Geography* of former Ages exhibited more agreeable to the Truth. Farther than this, *Modern Geography* can give no Light into that of the preceding Ages; the Face of Things being ſo much changed from what they were, that neither the ſame Diviſions of Countries, Names of Places, or Cities themſelves, exiſt at preſent, that were in Being a few Centuries before.

Hiſt.] *Geography* was not cultivated with greater Vigour and Succeſs in the former Period by the Orientals, than it has been in this by the Weſtern *Europeans*; who, by the great Diſcoveries, and exact Aſtronomical Obſervations they have made for determining the Situations of Places, have render'd *Geography* more Service, than it had receiv'd in all the former Ages.

About the Middle of the Fifteenth Century, Diſcoveries were firſt ſet on foot by *P. Henry* of *Portugal*, who was earneſt to have the Coaſts of *Africa* explored, and the Way to *India* by Sea laid open. This was effected by *Vaſco di Gama* in 1499. About the ſame time the Continent of *America*, utterly unknown before to the Nations inhabiting on this Side of the Globe, was found out by the famous *Chriſt. Columbus* in 1492. The Ice being thus broken, Diſcoveries were proſecuted both by Sea and Land with great Vigour, and the Situations of the Chief Places, eſpecially on the Coaſts, determined as to the Latitude. This great Progreſs in Diſcoveries by Sea were owing chiefly to the Invention of the Compaſs and Quadrant, which are ſuppoſed to have been firſt employ'd, at leaſt to any conſiderable Purpoſe, by *Columbus*. As theſe Enterprizes had more regard to the Improvements of Trade than Geography, Diſcoveries were proſecuted no farther than was neceſſary to that End: But finding it requiſite for the Security of Navigation, to have the Situations of the Coaſts of the Continents and Iſlands determined more accurately than they were at firſt, Mathematicians were ſent from their Academies (eſtabliſhed about that Time for the Improvement of the Sciences) into ſeveral Parts of the Earth for that purpoſe; whereby the Longitude, as well as Latitude, of the principal Ports throughout the commercial Part of the Globe, have been determined with great Preciſion, the chief Glory whereof belongs to the *French* and *Engliſh*.

While the Mathematicians, and others, were procuring Materials abroad, the Geographers at home were putting them together, and from time to time publiſh'd their Works, which have become very numerous, and daily encreaſe. The moſt eminent of the Moderns, who have publiſh'd Globes and Maps, are, *Ortelius*, *Mercator*, the *Hondius's*, *Blaew's*, *Janſſon*, the *Sanſons*, *Du Val*, *De Fer*, *Coronelli*, *Morden*, and *De l' Iſle*. The beſt Tables of Latitude and Longitude are thoſe of *Kepler*, *Wendelin*, *Bullialdus* or *Bouillaud*, *Albertus Limennus*, and *Riccioli*, (who has collected them) for the early Obſervations; and for the New thoſe of *Street*, *De la Hire*, *Harris*, the *Paris* Academy of Sciences in the *Connoiſſance des Tems*, *P. Noel*, and *P. Souciet*. *Sanſon* has given Synoptical Tables of the Diviſions of Countries, but without the Situations. The moſt remarkable Geographers who have written Treatiſes are, *Munſter*, *Davity*, *Mercator*, *Janſſon*, *Blaew*, *Heylin*, *Sanſon*, *Noblot*, *Mallet*, *Martineau du Pleſſis*, *Morden*, *Gordon*, *Luyts*, and the Authors of the *Complete Geographer*, in the Syſtematical Way; and in the Dictionary Way, *Ortelius*, *Ferrarius*, *Baudrand*, *Bohun*, and his Improver *Bernard*, *Maty*, *Corneille*, and *La Martiniere*. To which we may add, for the General Geography, *Carpenter*, *Sanſon*, *Varenius*, *Riccioli*, *Liebknecht*, *Chamereau*, and *Sherer*.

But notwithſtanding the great Improvements *Geography* has received of late Ages, the *European Geography* is ſtill very defective: For a great Part of the Eaſt remains yet undiſcover'd, and the Situations that have been determined Aſtronomically, are but few in compariſon of what are wanted.

Theſe Weſtern Nations know very little yet of the Sea-Coaſts of *Siberia* and *Tartary*, from the River *Oby* to *Korea*, containing near one half of the *Aſiatic* Shores; the *Tartarian* Ocean, tho' often attempted, having never yet been navigated, excepting of late by the *Ruſſians*. They are Strangers to the North and North-Weſt Coaſts of *America* above *California*, and to thoſe of *Green-Land*, the *Magellanic* Lands, *New Guinea*, and *Holland*, of whoſe inland Parts they know nothing at all; not to mention the *Terra Auſtralis incognita*. Within Land, all the Middle Parts of *Africa*, Great *Tartary*, and *Siberia*, the Countries between *India* and *China*, *California*, *South America*, the Iſlands of *Madagaſcar*, *Ceylon*, *Borneo*, *Japan*, &c. are but little known to them. They have but a ſlender Knowledge even of *India*, *Perſia*, *Armenia*, *Diyarbekr* or *Meſopotamia*, *Irâk Arabi* or *Chaldea*, and other *Aſiatic* Countries, moſt frequented by them; and leſs of *Arabia*, *Egypt*, the Northern Coaſts of *Africa*, *Syria*, and *Aſia Minor*, than the Antients. Till of late, they were uncertain whether *California*, *Japan*, and *Nova Zemla*, were Iſlands, or joyn'd to their reſpective Continents. They have imagined ſome Countries to be contiguous, which are far aſunder, as *India* and *China*; others to be in *Africa*, which were in the North Eaſt Parts of *Aſia*, as *Preſter John*'s Country. In ſhort, no one of the Four Quarters, into which the Earth is divided, is perfectly known to them; they being in a good meaſure Strangers, not only to *Tranſilvania*, *Moldavia*, *Walakia*, *Ukrain*, *Bujak*, *Little Tartary*, and other Countries in the Eaſt Part of *Europe*, but alſo to ſeveral Countries of the North; inſomuch, that *Buſſing*, after recommending to the Learned the procuring an accurate Geography of *Livonia*, *Courland*, *Samogitia*, *Ingria*, *Finland*, the *Swediſh* Coaſts of the *White Sea*, and *Ruſſian Lapland*, concludes, that the Knowledge which we have of thoſe Countries appear'd to him ſo very defective, that he had a clearer Notion of the *Eaſt* and *Weſt Indies*, than of them (*A*). In ſhort, there may be ſtill about one fourth; and, according to ſome (a), one half of the Earth yet undiſcover'd.

With regard to Aſtronomical Obſervations, the greateſt Quantity has been made in *Europe*, and that chiefly in *Great Britain*, *France*, *Germany*, *Italy* and *Turky*; for *Ruſſia*, we know we have ſome exact Obſervations of the Latitude, but not above two or three of the Longitude; and fewer ſtill of either, for *Holland*, *Denmark*, *Sweden* and *Poland*.

(*A*) Quod enim ad cognitionem Septentrionis attinet, tam ſterilis illa mihi, tamque inſufficiens videtur, ut vel *Indiæ Orientalis* atque *Occidentalis* facies perſpectior ſit ac Regiones laudatæ, licet viciniores (*a*).

(*a*) Vid. Novor. Literar. Maris Balt. Tom. 5. p. 53. Ann. 1702.

(a) See *La Mothe le Vayer*, ap. Refl. on Learning, p. 140.

With reſpect to *Aſia*, for the inland Parts, ſeveral Obſervations both of the Latitude and Longitude have been made in *China*: One at *Siam*, in the farther Peninſula of *Ganges*: Some of the Latitude in the hither Peninſula. In *Hinduſtân*, or the *Mogul's* Empire, the Latitude and Longitude have been obſerved only at *Agrâ*. Some Obſervations have been made of the Latitude in the Countries between *India* and *China*; ſeveral in the Country of the *Mongals*, and Eaſtern *Tartary*; with one or two of the Longitude in the Weſtern Parts; and in *Siberia*, ſome of the Latitude, but none with any accuracy of the Longitude. For *Perſia* we have the Latitude of a few conſiderable Places, chiefly in the Road from *Derbend* to *Iſpahân*, and thence to *Gomrûn*. In *Georgia*, *Armenia*, *Diyarbekr*, *Irâk Arabi*, and *Kûrdiſtân*, the Situations of not above 5 or 6 Places have been determined, and that only as to Latitude. In *Anatolia* Obſervations have been made at *Arzerûm*. In *Syria*, and *Paleſtine*, at *Aleppo*, as to the Latitude only; and none at all in *Arabia*. For the Coaſts, Obſervations both of the Latitude and Longitude have been made at *Trebizond* and *Smyrna* in *Anatolia*, at *Alexandretta* in *Syria*, and of the Latitude at *Rhodes*, in the Iſland of that Name. Several of this laſt kind have been made on the Coaſts of *Perſia*, both in the *Caſpian* Sea and *Perſian* Gulf; a few in the Ports of *Arabia*. Two or three of the Longitude, and ſeveral of the Latitude, on the Coaſts of the hither Peninſula of the *Indies* and the *Moguls* Empire. Some of the Latitude, and one or two of the Longitude, in the farther Peninſula. Several on the Coaſts of *China*, both of the Longitude and Latitude. A few of the Latitude, and one or two of the Longitude, in the Oriental Iſlands. Two or three of the Latitude, and one of the Longitude, on the South Eaſtern Coaſt of *Tartary*.

For determining the Situations relating to *Africa*, we have no Obſervations within Land of the Longitude, except at *Kâhera*, or *Cairo* in *Ægypt*; nor of the Latitude, excepting a few made in *Ægypt*, *Nubia* and *Abyſſinia*. As for the Coaſts, Obſervations of the Longitude have been made at *Tripoli*, and *Alexandria*, in the *Mediterranean*, at the Cape of *Good Hope* in the South, and none at all on the Eaſtern Coaſts. The Latitude has been obſerved at a few other Places beſides the abovementioned. Obſervations of both Sorts alſo have been made in the Iſlands on the *African* Coaſt, particularly the *Canaries*, *St Helens*, and *Madagaſcar*.

In *America*, within Land, Obſervations of the Longitude have been made only at *Mexico*, and of the Latitude at a few

Places more. For ſettling the Coaſts, ſeveral have been made along the Eaſtern Side of North and South *America*, and the Weſtern Side of the latter *Peninſula*, both as to Longitude and Latitude; but on the Weſtern Coaſt of North *America* none, excepting two or three of the Latitude.

In this Scarcity of Obſervations, however, the Coaſts of the Earth, ſo far as known, are pretty well ſettled; which is a Matter of vaſt Moment both to Geography and Navigation.

Within this Period, the *Perſians*, *Turks*, *Chineſe*, and *Tartars* who are in Poſſeſſion of *China*, have contributed conſiderably to the Advancement of *Geography*; altho' it does not appear that they have made any new Diſcoveries. The *Tartars* particularly have ſignalized themſelves within this preſent Century, by cauſing exact Surveys, regulated by Aſtronomical Obſervations, to be made of their Dominions in *China* and *Tartary*, by the *Jeſuit* Miſſionaries *(A)*. The *Turks* alſo have publiſhed ſeveral curious Charts and Maps *(B)*, beſides Geographical Treatiſes, ſome whereof were lately printed at *Conſtantinople*; and to their own *Geography* have added what they could procure of the *European* *(C)*, from whence they have taken their Knowledge of *America*; a Part of the World where, perhaps, no *Turk* ever yet was.

(*A*) Theſe Maps, which are 36 in Number, are inſerted in the Deſcription of *China*, *Chineſe Tartary*, *Korea* and *Tibet*, lately publiſhed at *Paris* in 4 Volumes in Folio, by P. *Du Halde*, and now publiſhing in *Engliſh*.

(*B*) Their Chart of the *Euxine* Sea ſeems to be drawn from good Memoirs, and we are told is much eſteemed at *Conſtantinople*.

(*C*) In a Book of *Geography*, newly brought from *Turky*, entituled, *Jehân Numâh*, written by *Hateb Chelebi*, a late Author, mention is made in the Preface of *Gerard Mercator* and *Jodocus Hondius*, from whom ſeveral Matters are borrowed, and particularly an alphabetical Liſt of the moſt remarkable Places to be found in their Works.

BOOK V.

Treating of the SPECIES *of the* Comparative CLASS.

ANALYSIS.

WE come now to the *Species* of the *Comparative Claſs*, which ariſe from comparing and adjuſting thoſe of the former together.

National and Periodical *Geography* may be compared with two Views: Either, *Firſt*, To ſhew the Identity of Places, under different Names; or, *Secondly*, To ſhew the Accuracy or Inaccuracy of ſuch Geographical Performance.

Diviſion.] Hence *Comparative Geography* may be divided into *Parallel* and *Critical*.

CHAP. I.

Parallel GEOGRAPHY.

SECT. I.

The Definition, End and Diviſion of Parallel Geography.

Defin.] PArallel *Geography* is the Geography of different Nations or Times exhibited together: Whence this Geography is of a Compound Nature, mixing ſeveral Species together in one Syſtem.

End and Uſe.] The End of Parallel Geography is to apprize the Reader at one View of the State of Geography in any Nation at different Times, or of different Nations at the ſame Time. So that a Syſtem of Parallel Geography ſtands in Place of ſeveral others, that exhibit only Single Species; as it may contain Antient, Middle, and Modern Geography, or the Geography of the *Engliſh*, *French*, *Arabs*, &c. all together. What is more, the ſeveral Species being by this means connected and adjuſted, the Geography and Hiſtory of any Age become intelligible; the Difficulties and Obſcurities, that confound Readers, are removed; and they find that Light from thence, which they could not receive from many Syſtems of different Species. In ſhort, this is the moſt uſeful of all the Species of Geography; not only as in effect it includes all the reſt, but alſo as it preſerves Geography from decay, by connecting the Geography of one Age with that of another; without which all the Geography of former Ages, that is, the Antient and Middle Geography, would be uſeleſs, and periſh.

Diviſion.] As Parallel Geography conſiſts in connecting and adjuſting the Geography of different Nations and Times together, it may be divided into *National* and *Periodical*.

SECT. II.

Of National Parallel GEOGRAPHY.

Definit.] NAtional Parallel Geography is the Geography of different Nations at the ſame Time, exhibited together. Hence it might be called Contemporary Parallel Geography.

End and Uſe.] The End of this Species is to adjuſt the Geography of different Nations, and ſhew how Places in one Country are denominated by the Inhabitants of other Countries; and this enables them to read each others Hiſtories, which elſe would in many things be unintelligible.

Hiſt.] We meet with no Writers, Antient or Modern, who have drawn the Parallel between the Geography of different Nations, altho' we find ſome Traces more or leſs of this Sort in moſt Geographical Performances, the Names of Places being often inſerted as given by different Nations; but then it muſt be confeſs'd this happens rather accidentally, than with any Deſign in the Authors to draw the Parallel; in order to which, there needs no more than to be acquainted with the Names which each reſpectively gives to the ſeveral Parts and Places of the Earth, ſo far as known to them. And, indeed, nothing could be of greater Service to Geography than Books or Tables, exhibiting the ſeveral National Names, as well as the Geographical Terms, in the various Languages; which would ſerve as Funds, from whence the Geographer might draw Materials of that kind.

Manner of exhibiting.

The Parallel is exhibited more commodiouſly and diſtinctly by Globe or Map, than by Table, Syſtem or Dictionary; and, provided the Repreſentation be large enough, may take in the Geography of many Nations together, tho' not ſo commodiouſly as the other Methods.

As to the Order of ranging the Names, thoſe belonging to the Nation, whoſe Geography is exhibited, ought to be inſerted firſt. Thus, in a Body of *Engliſh* Parallel Geography, the *Engliſh* ſhould be placed firſt; in a Body of *French* Geography, the *French* Names are to take place; in one of *Turkiſh* Geography, the *Turkiſh* Names, and ſo of the reſt. The Names uſed in the reſpective Countries ſhould be placed next; that is, in *Germany*, the *German* Names ſhould come juſt after the *Engliſh*; in *Turky*, the *Turkiſh* Names. The Names given by other Nations to the ſame Places, may be inſerted at pleaſure: Which ſeveral Names ought to be diſtinguiſhed by the initial Letters of the Names of the Nations to which they belong, or by ſome other Mark.

Rules for drawing the Parallel.

Here it may be proper to ſet down ſome General Rules, with regard to this uſeful Species, for drawing the Parallel.

'Tis eaſy to draw the Parallel, or to diſcover the ſame Places under different Names, when ſeveral Nations communicate their Obſervations, or make uſe of the ſame Materials, as the *Engliſh*, *Dutch*, *French*, &c. for the general, do; or when the Situation of Places, Bounds, and Diviſion of Countries, Courſe and Figure of Rivers, Mountains, *&c.* are the ſame in one Geography as another; for then the local Similitude and Agreement determine the local Identity, tho' the Names be different.

'Tis eaſy alſo to draw the Parallel, when, tho' there be a local Difference, there is a nominal Agreement: For in that

Caſe the Identity of the Names fixes the Identity of the Places, however differently they may be repreſented in the Geographies of different Nations. The Difficulty, therefore, only is, when, beſides a Diverſity of Names, we find a local Difference; in which Caſe we cannot always promiſe ourſelves Certainty in the Diſcovery, and can only do our beſt Endeavours that way, by obſerving certain Rules, whereof the following are ſome of the chief.

Firſt, To conſult the Authors of every Country; and, if they afford no Light, to conſult thoſe of the neighbouring Countries, by which often the Diſcovery is made: Thus, altho' the *Chineſe* Geographers make no mention of *Katay* (which is, indeed, the *Mogul* Name) yet it appears from the *Ruſſian*, as well as the *Oriental* Geographers, that it is the ſame with *China* (or rather the Northern Part thereof) and *Kambalu*, or *Khânbâlik*, *Pe-king*. Again, in the *Turkiſh* Geography we meet with a City in *Egypt* called *Meſr*, and being at a Loſs to know what Name it goes by in the *Engliſh* Geography, on conſulting the *Arabian* Geography, we find it to be the ſame with them as *Kâhera*; *Kâhera* we find to be the ſame with *Caire* in the *French* Geography, and *Caire* we know to be *Cairo* with us, who take it from the *Italians*: Whence 'tis evident, that *Cairo* and *Meſr* are the ſame City.

Secondly, To conſult the Signification of Names; it being cuſtomary for one Nation to tranſlate the Names uſed by another Nation into their own Language, when they will bear ſuch Tranſlation: For inſtance, in the Geography of the *Turks* we meet with a Place named *Ak kermân*, at the Mouth of the River *Nieſter* in the *Black Sea*, and by the Interpretation find it to be the ſame with that called in our Syſtems *Belgorod*, or *Bielgorod*, both ſignifying *White Fortreſs*, the firſt in the *Turkiſh*, the latter in the *Sclavonian* Language. The Knowledge of Languages therefore (at leaſt ſo far as extends to Geographical Matters, which is of no great Compaſs) is a neceſſary Qualification to one who would ſucceed in Parallel Geography.

Thirdly, To trace the Corruption of Names; for one Nation ſeldom imports the Names uſed by another exactly as they are written or pronounced by them, but, thro' miſtake, or for better Sound-ſake, in conſequence of the Idiom of their reſpective Languages, changes them more or leſs. Thus the Country called *Pars*, or rather in a larger Senſe *Irân*, by the Natives, is by us called *Perſia*, by the *French* *Perſe*, by the

Germans Perſien. *Haleb,* as the *Arabs* name that City of *Syria,* is written by the *Turks Halep,* by the *French Alep,* and by us, after the *Italians, Aleppo.* We ſay *Tartars* inſtead of *Tatars, Bagdat* inſtead of *Baghdâd, Tauris* for *Tabrîz;* thus almoſt in every Name changing ſomething.

Nor is this Practice of the ſeveral Nations confined only to the more diſtant Parts, but thoſe of the moſt neighbouring Countries undergo the like Alteration. Thus the *French* call *England, Angleterre;* the *Germans, Engelland;* the *Italians, Inghilterra;* the *Spaniards, Inglatierra;* the *Orientals, Ankittar.* The *French* call *London, Londres:* We call *Marſeille* and *Lyon, Marſeilles* and *Lyons.* The Capital of the *German* Empire is called by the *Germans, Wien;* by the *French, Vienne;* and by us, *Vienna.*

Mentz, as we call it, agreeably to the Inhabitants, is named by the *French, Mayence;* and by the *Spaniards* and *Italians, Moguntia.* The City called by us *Antwerp,* is named by the *Flemmings, Antwerpen;* by the *Germans, Antorff;* by the *French, Anvers;* by the *Italians, Anverſa;* and by the *Spaniards, Enueres.*

Fourthly, To trace the Orthography of different Nations: Whence ariſes a very great Diverſity in the local Names, equal to that cauſed by Corruption. A certain Author, otherwiſe judicious, admires whence different Geographers came to write the Names of the *Chineſe* Provinces ſo very differently, as, *Chanſi* and *Xanſi, Chan tong* and *Xan tum:* He might have added, *Schan tung, Sjan tung, Scian tung, Szan tong;* which Difference ariſes purely from the different Orthographies, thoſe Names having all the ſame Pronunciation in their reſpective Languages. The *French Ch,* the *Portugueze X,* the *German Sch,* the *Dutch Sj,* the *Italian Sci,* (before *a, o,* or *u*) and the *Poliſh Sz,* being equivalent to the *Engliſh Sh.* In like manner the *Portugueze* expreſs by an *m;* the Sound which we expreſs by *ng* at the End of Words.

The *French* write *Ouaſet,* the *Italians Vaſet,* and we *Waſet.* Again, the *French* write *Tchangan,* the *Germans Tſchangan,* the *Poles Czangan,* and we *Changan.* The Country called by us *Jorjan,* is written by the *French Giorgian,* by the *Dutch Zjorzjan,* by the *Germans Dſordsjan;* and thus the ſame Names, as ſpelt by one Nation, appear very different to another. In order, therefore, to draw the Parallel in theſe Caſes, it is abſolutely neceſſary to be acquainted with the different Idioms of Languages, and the Force of the Letters belonging to the Alphabets in uſe with different Nations; by which means only the Geographer will be able to overcome a Multitude of Difficulties in fixing the Identity of Places.

SECT. III.

Of Periodical Parallel GEOGRAPHY.

PEriodical Parallel Geography is the Geography of the ſame Nation at different Times exhibited together.

It differs from National Parallel, whoſe Office is to exhibit the Geography of any particular Period or Time independent of all other.

End and Uſe.] Its End is to ſhew the Bounds and Diviſions of Countries, with the Names of Places, in the Geography of any Nation at different Times; and is of uſe for underſtanding the Hiſtory of different Ages.

Hiſt.] This Species of Parallel Geography has been all along cultivated more or leſs. In ſpeaking of Countries, it was natural to mention the old Diviſions, Places, or Names.

Pliny, *Strabo*, and other of the Antients, have done it with regard to the moſt conſiderable Countries and Cities. *Callimachus Cyreneus*, and a few more, wrote Books of the Change of Names; but none of them, that we know of, publiſh'd a thorough Body of Parallel Geography. In this reſpect the Moderns have excelled them, and publiſh'd a conſiderable Number of Maps, Syſtems and Tables, wherein the Parallel is drawn between Antient, Middle, and Modern Geography. The larger Syſtems, as thoſe of *Heylin* and *Luyts*, commonly include ſomething of the Geography of different Periods; but the moſt expreſs Work of this kind is that of P. *Briet*, or *Brietius*, under the Title of *Parallela Veteris & Novæ Geographiæ*, conſiſting of both Maps and Treatiſe. It goes no farther than *Europe*, altho' we are told the Whole was finiſh'd by that *Jeſuit*; and *Langlet du Freſnoy* (a) ſaw all the Maps of *Aſia* engraven. *Ortelius*'s *Theſaurus* is, among other things, to be eſteem'd for giving the Periodical Names of Places, as his Dictionary principally regards the Antient Geography. He has added a Table of the Modern Names, with the Antient correſponding to them. *Ferrarius* and *Baudrand* have done the like. *Bohun* and *Maty*, whoſe Dictionaries contain the Modern Geography, have ſubjoined Tables of the Antient Names, with the Modern anſwering to them. P. *Riccioli*, in his *Geographia Reformata*, has given two Tables, in one of which the Modern Names are placed firſt, in the other the Antient.

(a) Meth. etud. Geogr. Tom. 3. in Catal. Author.

But what may ſeem ſurprizing is, that none of the Geographers, at the ſame time they have drawn the Parallel, ſeem to have conſider'd this as a Species of Geography, not even P. *Briet* himſelf, tho' he has been ſo near the Mark; for as he does not entitle his Book *Parallel Geography*, but only *A Parallel of Geography*; neither does he mention any thing in his Preface tending that way. Nor have any of the Geographers ſince taken the Hint from him, not even M. *de l'Iſle* himſelf. The Truth is, few of the Geographers, excepting *Sanſon*, have had any Notion of the Uſe of dividing Geography into Species, much leſs of giving their reſpective Works Titles according to the Species to which they belong. What is ſtill more ſtrange, we do not find that the Geographers ſeem apprized of the Excellency, and extraordinary Uſe of this Species, tho' ſome of them have occaſionally drawn the Parallel. Indeed M. *Trelage*, who, under the Name of *Tillamont*, made ſeveral Maps, publiſh'd by M. *Nolin*, one of the K. of *France*'s Geographers, generally added the Antient to the Modern Names, as being agreeable to his Taſte: But M. *de l'Iſle*, from whom we have this Remark, does not ſeem himſelf to have had any extraordinary Opinion of the Merit of ſuch Maps; ſince he only ſays coldly on that Occaſion, that this Method, when employ'd with Judgment and Knowledge, is good and uſeful, provided it cauſes no Confuſion in the Map (a). Indeed, if the different Bounds and Diviſions be expreſs'd, it will be difficult to avoid Confuſion: But as for the Periodical Names, they may be inſerted without creating any; and a Treatiſe on that Subject, marking all the nominal Changes, and when they happen'd, would be of great Service in Geography.

Manner of Exhibiting.

In Exhibiting the Parallel, either by Repreſentation, Tables or Treatiſe, the Names of Places may be ranged two Ways: *Firſt*, By inſerting the moſt Antient Name firſt, and then in order the other Names till you come to the Modern; or, *Secondly*, by placing the Modern Name firſt, and ſo going backwards, ending with the moſt Antient.

(a) See *de l'Iſle* ſur Carte d'*Eſpagne*, ap. Mem. de Trev. Tom. 3. p. 252. Ann. 1701.

Both of theſe Methods have their Uſes; for ſometimes it is convenient to treat the Subject one Way, ſometimes the other. When you begin with the Antient Geography, the Modern becomes ſubſervient; when with the Modern, the Antient is ſubſervient: Tho' both may be treated of as expreſsly and fully one Way, as the other; and the more any Geography has of the Parallel, the more ſatisfactory it muſt be. A Body compoſed in the firſt manner, may, for Diſtinction ſake, be intitled, *Antient and Modern*; the latter kind may be termed, *Modern and Antient Geography*.

Rules for drawing the Parallel.

It is more difficult to draw the Parallel of Periodical than National Geography, becauſe we find Alterations from Time to Time in the Diviſion or Bounds of Countries, as well as the Names of Places. Beſides, the Geography of the ſame Nation does not agree ſo well with itſelf at different Times, in reſpect to the Situation of Places, as the contemporary Geography of different Nations do agree together; becauſe of the Communication among contemporary Nations, which the ſame Nation cannot have in different Ages.

However, to draw this Parallel would be no impoſſible Task, were the ſeveral Changes regularly remarked by Authors: But as we have no Succeſſion of Geographers, or Hiſtorians, who have mark'd thoſe ſeveral Changes in Countries and Places, this Species of Geography is not only very imperfect, but alſo exceeding difficult; and the rather, becauſe the Syſtems of the Geographers of former Ages which remain, are generally confined to the Geography of the Age they lived in, wherein they have ſeldom minded to inſert the Antient Names of Countries and Places. In like manner, the Hiſtorians have mentioned Places for the moſt part only by the Names they went by at the Time they wrote: So that the ſame Place being mention'd by different Authors under different Names, the Geographer is often miſled to take them for ſo many different Places. This renders the Knowledge we have from *Notitiæ*, or other Books, very uncertain: Nor is the Inconvenience greatly remedied by means of Maps made in different Ages; for they often differ as much with regard to the Figure and Situation of Countries and Places, as the Names of them.

But altho', for the Reaſons abovemention'd, it be impoſſible to draw the Parallel between the Antient, Middle, and Modern Geography, in almoſt innumerable Inſtances, yet a conſiderable Progreſs may be made therein by the Diligence and Skill of Geographers, in comparing the Situations of Places together, and examining the Origin and Etymology of the ſeveral Names.

Situat. *Aſtron.*

1 With regard to the Situations, the Geographer may begin with the Aſtronomical. This is a ſure Method: For if the Longitude and Latitude in two, three, or more different Ages, agree, the Place muſt needs be the ſame, tho' under ſo many different Names; provided always, that the Obſervations were exactly taken. Nay, the Latitude itſelf, joyn'd to ſome other Circumſtances, as its Poſition on a known River, Hill, Lake, Coaſt, or Diſtance from ſome other Town, or remarkable Place would ſerve the purpoſe.

But the Misfortune is, very few Obſervations have been made in former Times, and thoſe only with regard to the Latitude, nor that very exactly: So that very little Aſſiſtance is to be expected in fixing the Identity of Places from this Method.

Yet many Authors, not conſidering this, have look'd on the Agreement of the Antient and Modern Situations, given by Authors of different Ages, as an unerring Rule. P. *de la Maze*, in his Travels to *Iſpâhân*, endeavours to prove againſt *Ortelius*, and others, that *Iſpâhân* is not *Hecatompolis* the Capital of *Parthia*, becauſe *Ptolomy* puts that City about 14 Deg. more Eaſt than *Iſpâhân* is placed by the *French* Geographers, and 5 Deg. 25 Min. more to the North (a).

But by the ſame Rule it may be proved, that *Byzantium* is not *Conſtantinople*; nay, that *Rome* is not *Rome* itſelf; becauſe *Ptolomy* puts the firſt 10 Deg. more Eaſt, and 2 Deg. more North; and the ſecond 6 Deg. more Eaſt, and 40 Min. more South, than they have been found to be by Modern Obſervations.

The Tables of the *Oriental* Geographers, which are for the moſt part made from Itineraries, as well as *Ptolomy*'s, often confound two diſtinct Cities together. So we find in *Abu'lfeda*'s Table of *Arabia*, the ſame Latitude and Longitude is given to *Aylah* and *Madyan*, as well as to *Dhamar* and *Dafar*, by different Authors. Nay, in the Deſcription which follows thoſe Tables *Abu'lfeda* himſelf very gravely tells us, that *Al Hojr* has the ſame Latitude and Longitude with *Al Yamâmah*, which yet in the ſame Place he makes to be two Days Journey aſunder (b).

2. The

(a) See Mem. des Miſſion. Tom. 3. p. 474.

(b) Vid. *Abu'lfeda* Deſcr. *Arabia*, p. 60. ap. *Hudſon* Geogr. vet. *Græc.* Vol. 3.

—*Geomet.* 2. The next Method of determining the Identity of Places, is by comparing their Geometrical Situations together; for if two Places, under different Names, are marked in Authors of different Ages, to have the ſame Bearing and Diſtance from ſome one known Place, they may be deemed the ſame.

This Method is more certain than the former, becauſe the Bearing and Diſtance may be taken with greater Preciſion than the Latitude and Longitude: But then very few of the Bearings and Diſtances, marked in either the Antient or Modern Itineraries, have been taken Geometrically, and conſequently not with Accuracy enough for determining the Parallel as to moſt Places. Excepting *Thevenot*, *Wheeler*, and one or two more, who have taken the Bearings of Places in ſome of the Roads they travelled, all the reſt of the Travellers content themſelves with giving the Diſtances, nor them conſtantly. Beſides, the Geographies and Itineraries of the Antient and Middle Ages, thro' Fault of the Authors, or Copiſts, diſagree very frequently in computing the Diſtances. The Defect of the Bearing may often be ſupply'd in ſome meaſure from the Situation of Places, as exhibited in *Agathodæmon*'s Maps, drawn from *Ptolomy*'s Tables, to which they are commonly annexed; likewiſe from the Courſe of the Roads, or Series of Places in the Antient Itineraries, and the Routs of Armies, as mention'd by Hiſtorians.

—*Hiſtoric.* 3. Conſiderable Light is obtain'd by comparing the Hiſtorical Situation of Places: Thus, if two or more Authors of different Times agree in their Deſcription of ſo many Places, to give them the ſame ſort of Situation, with reſpect to ſome remarkable Part of a known Mountain, River, Lake, or Sea-Coaſt; thoſe Places, tho' under different Names, may be preſumed to be the ſame: For inſtance; the City *Hang-chew fu*, in the Province of *Che-kyang*, in *China*, appears to be the *Quinſay* of *Marco Polo*, from its Situation with reſpect to its Lake, and the River whereon it ſtands, as well as the Deſcription of that Lake, and other Particulars. So his *Jaci* (in *Carayam*) appears to be *Yun-nan*, Capital of the ſame Name, among others, from the Circumſtance of its Lake alſo.

The very Knowledge of the Diſtrict, or even Province, may be of ſome Uſe, at leaſt to prevent going too much aſtray. Thus the Circumſtance of *Ecbatana*, being the Capital of the Greater *Media*, is a Demonſtration that it cannot be *Tauris*, as moſt Geographers will have it; becauſe *Tauris*, or *Tabriz*, is in *Aderbijân*, which is the *Atrapatene*, or Leſſer *Media* of the *Greeks*.

Names Affinity.

4. The Uſe to be made of Names, in fixing the Identity of Places, reſpects either the Affinity of the Sound or Signification.

—in Sound.

Where the Name continues the ſame, or with very ſmall Variation, thro' the ſeveral Ages, as, *London*, *Rome*, *Conſtantinople*, *Ancona*, *Syracuſe*, *Indus*, *Ganges*, and the like, there can be no doubt as to the Identity. However great Caution muſt be uſed, eſpecially when the Changes are not duly marked, and the Identity is oppoſed by other Circumſtances: This being a deceitful Guide at beſt, and the Rock whereon Authors are daily ſhip-wreck'd; for every like is not the ſame. Thus *Camboritum* is *Iklingham*, and not *Cambridge*, as it hath been generally taken to be.

Agra is not the *Agara* of *Ptolomy*, as *Voſſius* thinks (a), *Agra* being a City of Modern Foundation. Nor is *Tyria*, or *Tyreth*, the Antient *Thyatira*, tho' ſuppoſed to be ſuch by the very *Greeks* themſelves who inhabit it, *Tyria* lying near *Epheſus*; whereas *Thyatira* lay to the North or N. E. of *Smyrna*, and has been found to be the ſame with *Ak hiſſar*, by *Ricaut*, *Smith*, and others.

Cairoan is taken by ſome Authors for the Antient *Cyrene* (b), altho' the former is near *Tunis*, and the latter 600 Miles diſtant on the other Side of the Gulph of *Sidra*, and call'd at preſent *Grene*. *Haleb*, or *Aleppo*, is by others ſuppoſed to be *Khalibon*, tho' *Ptolomy* makes *Khalibon* a diſtinct City, in a different Province from that of *Beræa*, which appears to be *Haleb*.

If the Rule of Similitude was to be follow'd without regard to other Conſiderations, we might pretty fairly deduce the *Saracæni* or *Saracens*, from the *Siraceni*, who inhabited *Sarmatia Aſiatica*; and *Aſtrakân*, a famous City near the Mouth of the *Wolga*, from the *Aſturoani*, in the ſame Parts, towards the Lake of *Mæotis*.

But if Places whoſe Names have ſo near a Reſemblance are not the ſame, the Rule muſt be ſtill more uncertain, when the nominal Difference is ſo conſiderable, that Violence muſt be done to the Names to give them any Reſemblance. Thus Dr *Wells* derives the ſame *Saracæni* from *Sabtecha* (c); and the Names of *Comagene*, a Province of *Syria*, and the Lake of *Mæotis* abovemention'd, from *Magog* (d), thro' ſuch

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(a) *Voſſ.* de Emend. Long. ap. Var. Obſ. p. 164. (b) D'*Herbelot* Art. *Cairavan*, p. 241. (c) *Wells*'s Geogr. Old Teſt. Vol. 1. p. 198. (d) Ib. p. 163.

a diſtorted Courſe of Changes, as would give one a Diſguſt to Etymological Learning (b).

Arias Montanus, *Du Pleſſis*, and others after them, have thought they found Reſemblance enough in the Name of *Peru* to make it the *Ophir*, whither *Solomon* ſent Ships to fetch Gold: But, beſides the unpardonable Abſurdity of ſuppoſing *America* to have been known and reſorted to, in thoſe early Times before the Compaſs was diſcover'd, it appears that *Peru* is a Name given that Country by the *Spaniards* ſince their Conqueſt, as they have given *Jucatan* to another, which yet the ſame *Montanus* derives from *Joktan*, on Account of the Names being very near alike (c).

It muſt be confeſs'd, Time often produces ſo great a Difference in the Pronunciation and Spelling of the ſame Name, that they ſeem to have no more Affinity than *Magog* and *Mœotis*. Who would imagine, for inſtance, that *Quadrea*, a Village 4 Miles from *Ferrara*, is derived from *Caput Eridani*, ſo called from the *Eridanus*, or *Po*, dividing there into two Branches? And yet it appears to be Fact: For *Caput Eridani*, being corrupted in the *Italian* Idiom, was firſt called *Cod' Eridano*, afterwards *Coderida*, in Proceſs of Time *Coderea*, and at length *Quadrea*, the Name it bears at preſent (d). Our *Pomfret* in *Yorkſhire* is a Corruption of *Ponte fracto*, ſignifying *Broken-Bridge*, the Name given it in the Time of the *Romans*. The like has happen'd to Numbers of other Places.

In proving the Identity of Places, recourſe may be had in all Caſes to the Geography of other Nations, from whence conſiderable Light is to be gather'd. Thus there is no Place now in Being in *Perſia*, that bears an Affinity in Name to the *Ecbatana* of the Antients: But the Place which in the *Septuagint* Verſion is render'd *Ecbatana*, is in the *Hebrew* call'd *Amatha*; which coming very near *Hamadân*, or (as *European* Authors commonly write it) *Amadan*, an Antient, and ſtill Famous City of *Irâk* in *Perſia*, goes a great Way, in conjunction with other Circumſtances, to prove *Ecbatana* to be *Hamadân*, as we have already ſhewn it cannot be *Tauris*.

—in Signification.

As to the Signification of Names, it often is of uſe in fixing the Identity: Becauſe on Revolutions occaſion'd by Foreign Powers the Conquerors frequently gave new Names to Places, which had the ſame Signification with the old.

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(a) *Wells's* Geogr. Old Teſt. Vol. 1. p. 164. (b) Univ. Hiſt. Vol. 1. p. 167. (c) See *Raleigh's* Hiſt. World. B. 1. C. 8. (d) Vid. *Ricciol.* Geogr. Reform. Lib. 2. C. 1, §. 3. p. 542.

The Country between the *Euphrates* and *Tigris*, call'd by the *Jews Nahraim*, was call'd by the *Greeks*, who conquer'd it, *Meſopotamia*, implying the ſame thing, that is, *the Country between the two Rivers*; and by the *Arabs al Jazirah*, or *the Iſland*. The Country call'd *Tranſoxana* by the *Greeks*, was call'd by the *Arabs Ma wara'lnahr*, both ſignifying the Country beyond the River *Oxus* or *Amû*. The Province of *Perſia*, call'd by the Natives *Kûbeſtân*, or *the Mountain Country*, was named by the *Arabs Jebal*, ſignifying the ſame. The Town on Mount *Ida*, call'd by the *Phrygians Kebrenus*, becauſe eaſily ſeen on all Sides, was call'd by the *Greeks Skepſis*, ſignifying the ſame.

The Geographers have been greatly puzzled to find out the Antient *Peluſium* of the *Greeks*, a famous City and Port of *Egypt*. It is commonly thought to be *Dimyât*, or *Damietta*. *William* of *Tyre*, *Renaudot* and *Schultens*, doubtleſs from the Similitude of Sounds, tho' ſmall as it is, take it for *Belbeys*, two or three Days Journey within Land; but from the Signification of the Word it appears to be *Tinah* of the *Arabs*, and the rather as being ſituated near the Mouth of the Eaſtern Branch of the *Nile*, as *Peluſium* was. And by the ſame Rule we are enabled to ſolve another Geographical Riddle, *viz.* that it was the *Sin* of the *Hebrews*; all thoſe three Names, *Sin*, *Peluſium* and *Tinah*, ſignifying *Mud*. Beſides, *Sin* and *Tinah* are nearly the ſame as to Sound, it being cuſtomary with the *Jews* to change the *T* of the *Arabs* into *S*.

This Cuſtom of tranſlating Names is common in all Nations, and is remark'd to have begun very early with the *Greeks* (a); and it could be wiſh'd, in changing the Names of Places, they had only follow'd this Method: But their uſual Way was, to give ſuch new Names as might commemorate ſomething relating to themſelves, or their Country. Hence their *Seleucia's*, *Alexandria's*, *Apamea's*, from the Names of their Princes; *Bucephala*, to honour a Horſe of that Name; *Hecatompylus*, to expreſs a City with a hundred Gates; juſt in the ſame manner as the *Spaniards*, *Engliſh*, *Dutch*, &c. have impoſed Names of their own on Cities, Rivers, Mountains, and Iſlands in *Aſia*, *Africa*, and *America*. And hence it is, that the *Greek* and *Roman* Authors are at this Day of ſo little uſe in drawing the Parallel; they having fill'd their Geographies with Names unknown to the Inhabitants of the reſpective Countries, without taking notice of thoſe in uſe with them. And as the *European* Geographers, more intent to pleaſe, or ſave themſelves Trouble, than to inſtruct their Readers, continue the ſame Practice, the Geography of theſe Ages will, in many reſpects, be as unintelligible to Poſterity, as thoſe of *Ptolomy*. *Strabo*, &c. are to us at preſent.

(a) Vid. *Plat.* in Critica, & *Strab.* Geogr. L. 1.

Travellers, and the Geographers after them, ſhould always take particular Care to give the Signification, as well as Origin, of local Names: For if they do not ſuffice to fix the Identity, they help at leaſt to prevent Miſtakes. Had *Arias Montanus*, and the other Authors abovementioned, been acquainted with either of thoſe Particulars, with regard to *Peru* and *Jucatan*, they could never have fallen into the Abſurdity of making the firſt of thoſe Countries the ſame with *Ophir*, and deriving the Name of the latter from *Joctan*; for *Peru* in the Language of the Natives ſignifies *Water*, and *Jucatan*, *What is that?* Being the Anſwers made by them to the *Spaniards*, who on their firſt Landing ask'd the Names of Countries (a).

In diſcovering the Identity, Hiſtorical Circumſtances will be often of uſe to corroborate others. Thus *Cambalu*, or *Khânbâlik*, mention'd by *M. Polo*, appears to be *Pe-king* from the Circumſtance of its having been the Capital of *Katay*; for *Pe-king*, then call'd *Yen-king* by the *Chineſe*, was the Capital of the Empire of the *Kin Tartars* (the ſame at preſent call'd *Manchews*) who reign'd in *Katay* (b).

In like manner *Shang-tu* (the Ruins of which are ſtill ſeen on a River of the ſame Name in *Tartary*, ſome Days Journey from the Wall of *China*, almoſt due North of *Pe-king*) is proved to be the *Ciandu* of the ſame *Polo*, from the Circumſtance of its having been the Summer-Seat of *Koplay Khân*, Vth Emperor of the *Moguls*, and Succeſſor of *Jenghiz Khân* (c), as well as from the Affinity of the Names.

Theſe are the beſt Directions we can think of for aſcertaining the Identity of Places, whereon the Parallel intirely depends.

(a) See *Raleigh* ubi ſupr. (b) See P. *Gaubil's* Hiſt. Abridg. du 5. Prem. Emp. *Moguls*, ap. P. *Souciet* Obſ. Math. &c. p. 189. (c) Id. ibid. p. 197. Note (4).

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CHAP. II.

Of Critical GEOGRAPHY.

CRITICAL Geography conſiders the Geography of any Nation, or Geographer, in point of Accuracy and Perfection.

Differ.

It differs from the former Species, in that it is not employ'd barely about exhibiting the State of Geography in different Nations and at different Times, and in reconciling them together, but in ſhewing the Errors, and rectifying them. Some, therefore, may think it ought to be conſider'd as a Species of Parallel Geography, whoſe Office is to exhibit the Diſparity as well as the Agreement of the reſpective Species. But then the Deſign of this Branch is not ſo properly to compare the different Species together, as to ſhew how much they accord with, or vary from the Truth; and, indeed, properly it conſiders a Geographical Performance, ſolely in reſpect of Accuracy, independent of its Relation to any Nation, Time, or Perſon.

End and Uſe.

This Species calls all Geography to an Account, and examines into the Accuracy of the Names, and Situation of Places, as well as the Diviſion of Countries; pointing out the Errors and Defects in each, and propoſing Remedies, chiefly with a View to improve and rectiſy Geography, in order to bring it to its deſired Perfection.

Hiſt.

Critical Geography began to be cultivated very early by the Antients. Every new Author corrected the Errors of thoſe who wrote before him. *Eratoſthenes*, in the Geography which he publiſh'd, or rather his Edition of *Timoſthenes Rhodius*, (for we are told he tranſcribed that Author to his very Preface) corrected the Map of the World in uſe before his Time. *Hipparchus* corrected the Errors of *Eratoſthenes*. The Firſt and Second Books of *Strabo* are a critical Examination of the Works of former Geographers; and the Firſt Book of *Ptolomy*'s Geography is a profeſs'd Critique on that of *Marinus Tyrius*, whereof his own is properly no more than a new Edition, with Improvements.

This Practice hath not been much uſed by the Moderns, who don't care to give themſelves the Trouble that ſuch a Scrutiny requires, or to ſpoil the Agreeableneſs of their Deſcriptions, by mixing them with critical Remarks. How frightful would ſuch things look in a Modern *Metode a la Geographie*, (which muſt appear more like a Novel than a Mathematical Book) where nothing but ſmooth Language and eaſy Diction muſt be found! However ſome Authors have written Critiques expreſly on the Geographical Compoſitions of others: As the *Sanſons* on the Geographical Dictionary of *Baudrand*, the *Pharus Galliæ* of P. *Labbé*, and *Bayle* on the Geographical Articles in *Morery*'s Dictionary. M. *de l'Iſle* criticiſed the Works of his Rival M. *Nolin*, another of the King of *France*'s Geographers. *Gryphæus* has written a Critique particularly on the *French* Geographers; and an *Engliſh* Author, in the *Appendix to the Conſtruction of Maps and Globes*, one on Geography and Geographers in general. The Royal Academy of Sciences at *Paris* have frequently, in their *Memoirs*, compared the Situations of Places reſulting from the Obſervations, with thoſe given by *Sanſon*, and other Geographers, in their Maps (a). Some of their Members made alſo Parallel Maps: As that of the Coaſts of *France*, by M. *Picart*, *de la Hire*, *Caſſini*, &c. to ſhew how much theirs drawn from the Obſervations differ from thoſe of *Sanſon*, and other Geographers. M. *de l'Iſle* with the ſame View drew a Parallel Map of the Coaſts of *Greece*, *Italy*, and Part of *Africa* (b); and another of the *Caſpian* Sea (c), repreſenting the Figure of it according to various Authors, compared with the *Survey* of the late *Czar*.

But all theſe are in detached Pieces, and only relate to particular Parts. What we want is a Body of Critical Geography, which may conſider the Geography of every Country in a regular Series, either by way of Notes in a Syſtem, or in a Treatiſe by itſelf.

Of the firſt ſort M. *la Martiniere* ſeems to have intended his *Great Geographical and Critical Dictionary*, as he calls it; altho' it contains nothing of Criticiſm to anſwer the Title. Of the ſecond ſort, we may reckon the *Geographia Reformata* of P. *Riccioli*: Wherein the Obſervations made by *European* Mathematicians in all Parts of the Earth till the Time he wrote, are examined by the itinerary Diſtances; and the Situations, as exhibited by different Geographers, compared with them, and one another. The late M. *de l'Iſle* ſeems to have intended ſomething of the ſame Kind in his *New Introduction to Geography*, ſo long promiſed by him, yet ſtill unpubliſh'd: In which, we are told, he deſign'd, 1. To collect all the Aſtronomical Obſervations of the Longitude and Latitude to be found among the *European* and *Arabian* Geographers; 2. To give the Courſe of the moſt remarkable Voyages, in order to ſerve either as a Supplement to the Obſervations, or as Proofs of their Exactneſs; 3. To rectify the Courſe of thoſe Voyages by Obſervations of the Variation of the Compaſs (a). But to complete ſuch a Work would require, 4. Itineraries, or the Roads thro' Countries; with an accurate Table of the Names of Places, and Diviſion of Countries, according to different Nations, and Periods of Time.

(a) See Mem. Acad. for the Years 1692, 1693. (b) Vid. *de la Hire*, Aſtron. Obſ. (c) See Mem. Acad. Scien. Ann. 1714. p. 227.

Object *of Criticiſm.*

Criticiſm in Geography may be confined to Three Points, *viz.* To examine if the Names and Situations of Places, with the Diviſion of Countries, be agreeable to the moſt exact Accounts. But to execute this well, requires a thorough Acquaintance with Geographical Materials, particularly Aſtronomical Obſervations and Itineraries. In ſhort, to be a good Critic in Geography, a Man muſt be a good Geographer.

Critical Reflections *on our Geographers.*

Beſides, that Geography is very far from Perfection, the Geographers, for want of due Skill or Care, will give large room for Criticiſm. Their Works are ſo far from furniſhing Materials for making Maps, which is the true End of ſuch Compoſitions, that they ſcarce contain any thing of Geography at all; and what little there is of it, is taken from old Authors or Maps, and conſequently very erroneous. This is the Caſe of all Treatiſes of Geography, without Exception. In ſhort, *de l'Iſle* is the only Geographer ſince the *Hondius's* and *Blaew's*, who has cultivated Geography effectually, and made a proper Uſe of the Materials extant in his Time: For *du Val*, *Morden*, *Coronelli*, and *de Fer*, have done it but in part; and as for the reſt, they have done

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(a) Mem. pour ſerv. Hiſt. des Hom. illuſt. Vol. 10. p. 50.

nothing but copied from the *Sanſons*, who methinks have been as blameable as any of the Geographers. An inconteſtable Proof of which, among other things, is their continuing ſo long to place, not only the Eaſtern Parts of *China* 30 Degrees more Eaſtward than they are, in oppoſition to repeated Obſervations of the Longitude; but alſo the Springs of the *Nile* above 20 Degrees below the Line, and *Conſtantinople* in 43 Degrees of Latitude: Altho' the firſt had been found to be about 12 Degrees on this Side the Line, and the latter not exceeding 41 Degrees.

It has already been obſerved (a), that the *Turkiſh* Geographers improve their Geography from the *European*, as well as other Foreign Authors: But the *Europeans* are ſo far from having recourſe to the Writings of the Orientals, that ſcarce any of them ſo much as conſult the Authors who have given Extracts from them. Altho' they have been a long time in Poſſeſſion of the learned Works of *Pocock* relating to Oriental Affairs; *Golius*'s Geographical or other Notes on *Alfragani*'s Aſtronomy; Part of *Abu'lfeda*, with the Tables of *Naſſir-addin* and *Ologh-beigh*, publiſh'd by *Greaves*; *D'Herbelot*'s Oriental Library, and the *Nubian Geographer*, a Book directly on the Subject, and publiſh'd above 100 Years ago; yet what Geographer is there among us, who quotes any of them, or appears from his Works to have made any uſe of them, excepting *Sanſon* and *de l'Iſle* in their Maps, and *la Martiniere* in his Dictionary? Indeed they generally neglect the proper Authors, from whence fit Materials might be taken; and copy from one another, inſtead of reſorting to the Travellers and Mathematicians. This is to be underſtood chiefly of the later Geographers, who want the Induſtry of the firſt (*A*); from whom they either copy or take moſt of what they publiſh, without any Judgment or Care. Thus moſt of the Maps and Treatiſes that have been publiſh'd ſince the Time of *Nicholas Sanſon*, have been copied from thoſe of that Geographer, with very little Alteration, but what is for the worſe. *William Sanſon* very juſtly complains of this Practice (*B*) in his Time; and moſt of thoſe who have

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(a) Page 226.

(*A*) *Caſtaldo* in 1550 publiſh'd Maps of *Europe*, *Aſia* and *Africa*, drawn from the Geography of *Abu'lfeda*, written in *Arabic*.

(*B*) This Author, in the Preface to his *Introduction to Geography*, after taking notice of what his Father had done towards mehave commenced Geographers ſince, have followed the ſame Courſe: So that the lateſt Diſcoveries and Obſervations are quite neglected; and the old Diviſions of Countries, and erroneous Situations of Places, ſtill exhibited in the neweſt Maps (a). The Explanatory Treatiſes are yet worſe: To deſcribe the Earth, ſeems to be the leaſt of their Deſign; the chief Care of their Authors being to fill them with Hiſtorical Accounts of the Manners and Cuſtoms of Nations.

But to ſet forth the Negligence of the later Geographers more effectually, we ſhall ſhew in what State *de l'Iſle* found Geography in 1700, when he began to reform it, by publiſhing new Globes and Maps. The *Mediterranean Sea* was extended in that Parallel 15 Degrees, or 300 Leagues, too much. The Coaſt of *Algiers* put 60 Leagues too far from that of *France.* The *Red Sea,* or *Arabic Gulf,* twice longer than it ſhould be. *New Holland* placed 15 Degrees too far from the *Cape of Good Hope*; *Van Diemans* Land 20, and *New Zealand* 25 Degrees; the *Iſles of Solomon* 1000 Leagues. *Aſia Minor* was repreſented by one half too long, *Perſia* one fifth. *Armenia, Kurdiſtan,* and *Babylonia,* [or *Irâk Arabi*] contracted twice as much as they ought; and the Countries between *India* and *China,* above 100 Leagues too narrow. *Perſia* was in Latitude 2 Degrees lower, and the *Indies* 3 higher than the Truth. The Form of the *Caſpian Sea* was exhibited very erroneouſly, and *Tartary* had no Reſemblance with the Truth, either in its Diviſion, Figure, or Dimenſions. In *Africa,* the Courſe of the River *Niger* was marked wrong, and ſeveral Kingdoms ſituated on the North Side transferred to the South Side; and on the contrary. The

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(a) See Conſt. Globes and Maps, Append. Ch. 2. p. 142 & ſeq.

thodizing Geography, and how eaſy he had rendred the Study of it by his Maps and Tables, obſerves, that from thence many took occaſion to ſet up for Geographers; thinking, by changing or adding ſomething, to conceal their Plagiariſm. *But their Ignorance,* continues he, *has run them into ſtrange Miſtakes: They have form'd imaginary Kingdoms; confounded the different Sorts of Governments, the Military with the Civil, the Temporal Juriſdictions with the Eccleſiaſtical, and one Province with another; they have given falſe Limits to Nations, and erected a Capital City in a Country where there are ſeveral Independent States; nay, ſome of them have made ſuch groſs Blunders, even in the General Diviſions, that one would think they wanted common Senſe itſelf* (a).

(a) *Sanſon,* Introd. a la Geogr. Pref.

Bounds of *Abyſſinia* were exorbitant, and its Form as well as Diviſion very falſe. In *America*, the Coaſt of *Guiana* was extended above one half too much, and the Southern Part of the Continent between *Buenos Aires* and the Frontiers of *Chili* 11 Degrees, which is a Difference of 215 Leagues (a). About 1720, M. *de l'Iſle* began to publiſh a new Edition of ſome of his Maps, wherein farther Corrections are made in the Geography before his Time.

The Performances of Geographers being ſo very erroneous in groſs, it will be needleſs to enlarge on particular Errors, which muſt be proportionally enormous as well as innumerable: However, it may not be amiſs to produce two Tables, one with reſpect to the Diviſion of Countries, the other to the Situation of Places, to ſhew the Condition of our moſt modern Books of this Kind.

Firſt TABLE.

The DIVISION *of* TARTARY,

Containing Five Great Parts, according to GORDON (*A*).

Southern.	
1. *Kathay,*	*Chambalu.*
2. *Turkheſtan,*	*Thibet.*
3. *Zagathay.*	*Samarchand.*
Northern.	
4. *Tartaria Propria,*	*Mongul,* or *Tenduc.*
5. *Tartary the Deſart,*	*Cambalich.*

Nothing can be more deformed and erroneous than this Diviſion. That Part of *Kathay* here ſet down, whereof *Chambalu* (the ſame with *Peking*) is the Capital, is the Northern Part of *China*, and conſequently no Part of *Tartary*, any more than *Zagathay*, which Name alſo no longer ſubſiſts, that of *Great Bukhâria* obtaining at preſent: Beſides, it is not within the Bounds of *Tartary*. *Thibet* is a vaſt Country, not a City, and at a very great Diſtance from the preſent *Turkheſtân*, whereof it is unaccountably made the Capital. *Mongul* is alſo the Name of a Nation, and *Tenduc* the Name of a Country, but long ſince obſolete; and *Cambalich* is the ſame with *Chambalu*, only written differently. As for *Tartaria Propria* and *Deſerta*, there are no ſuch Diſtinctions in uſe at preſent. To this I might add the erroneous Orthography, *Kathay* for *Katay*, *Chambalu* for *Khambalu*, or *Kambalu*, and

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(a) See *de l'Iſle* Lettr. ap. Journal des Sav. *Feb.* 1700. p. 136.

(*A*) *Gordon's Geographical Grammar*, p 247. Edit. 1738. It is obſervable, that this Book has gone thro' no leſs than 15 Impreſſions without any Amendments.

ſo *Cambalich* for *Khânbâlik*; *Turkheſtan*, *Zagathay*, *Thibet* and *Samarchand*, inſtead of *Turkeſtân*, *Jagatay*, *Tibet* and *Samarkand*.

Tartary at preſent may be divided in the following Manner:

Weſtern.	Chief City.
1 *Turkeſtân*,	*Turkeſtân*.
2 Country of the *Aluths*, or *Kâlmûks*,	*Urga*, or *Harkas*.
3 Country of the *Kalkas*,	
4 Country of the *Mongols*.	
Eaſtern.	
5 Country of the *Manchews*:	
1 Gov. *Shin-yâng*, or *Mûgden*,	*Shin-yâng*, or *Mûgden*.
2 —— *Kirin ûla Khotan*,	*Kirin ula Khotan*.
3 —— *Tſitſikar*,	*Tſitſikar*.

Second TABLE.

Of the Longitude *and* Latitude *of ſome Remarkable Places, as given by our lateſt Geographers, compared with the* Aſtronomical *Obſervations*.

Agra in the *Mogul*'s Empire.	Latitude.			Longitude.		
Geographical Grammar (*B*)	29°	00′	00″	79°	24′	00″ E
Gazetteer, 2d Part (*C*)	29	00	00	79	24	00
By Obſervation (*D*)	26	43	00	76	49	00

Alex-

(*B*) This is taken from a Table of Latitude and Longitude, inſerted in the latter Editions of *Gordon*'s Geographical Grammar; alſo in the *New Geographical Dictionary*, printed in 8vo, for *D. Midwinter*, 1738. It is obſervable, no mention is made in either, whence the Longitudes they give are taken, tho' they ſeem to be reduced to the Meridian of *London*.

(*C*) This Author (I mean the Author of the 2d Part of the *Gazetteer*) obſerves alſo, That others will have it in 38° 30′ Latitude, and 121° Longitude, as if he knew not which was neareſt the Truth; and indeed he ſeems to have had no Notion of the Longitude, or a Firſt Meridian: For inſtead of taking his Situations from one particular Set of Maps, as he ought to have done, he tells us, He has taken them from the beſt Maps (*a*), that is, Variety of Maps, as the above Inſtance ſhews; imagining, perhaps, that all Geographers made uſe of the ſame Meridian, or that the Difference of Meridians made no Difference in the Longitude. However I have reduced the Longitudes to the Meridian of *London*, as if they were taken from *de Wit*'s Maps; as thoſe in the firſt Part, compoſed by M. *Echard*, were.

(*D*) The Latitudes and Longitudes here, determined by Aſtronomical Obſervation, are taken from the Philoſophical Tranſactions, Memoirs of the Academy of Sciences at *Paris*, &c.

(*a*) See Pref. to 2d Part of the *Gazetteer*.

Alexandretta, or *Skanderún.*	Latitude.			Longitude.		
Geogr. Gram. and New Dict.	37°	10′	00″	37°	50′	00″ E
Gazetteer, 2d Part	38	10	00	49	24	00
By Obſervation	36	35	00	36	25	00
Alexandria in *Egypt.*						
Geogr. Gram. and New Dict.	31	25	00	30	50	00
Gazetteer, 2d Part	31	25	00	39	44	00
By Obſervation	31	11	20	30	21	30
Candia, in the Iſle of *Candia.*						
Geogr. Gram. and New Dict.	34	55	00	24	50	00
Gazetteer, 1ſt Part	34	55	00	51	49	00
By Obſervation	35	18	45	25	23	00
Conſtantinople.						
Geogr. Gram. and New Dict.	41	40	00	29	40	00
Gazetteer, 1ſt Part	43	00	00	35	44	00
By Obſervation	41	06	00	28	58	30
Lima in *Peru.*						
Geogr. Gram. and New Dict.	11	30	00	78	40	00 W
Gazetteer, 2d Part	23	30	00	81	56	00
By Obſervation	12	01	15	76	34	30
Madrid.						
Geogr. Gram. and New Dict.	40	00	00	3	28	00
Gazetteer, 1ſt Part	40	25	00	4	56	00
By Obſervation	40	26	00	3	05	00
Mexico.						
Geogr. Gram. and New Dict.	10	00	00	104	00	00
Gazetteer, 2d Part	28	30	00	109	36	00
By Obſervation	20	00	00	103	35	00
Pe-king in *China.*						
Geogr. Gram. and New Dict.	39	52	20	110	50	00 E
Gazetteer, 2d Part	40	00	00	00	00	00
By Obſervation	39	54	00	116	25	06
Rome.						
Geogr. Gram. and New Dict.	42	08	00	13	07	00
Gazetteer, 1ſt Part	41	50	00	15	46	00
By Obſervation	41	54	00	12	45	00
Smyrna.						
Geogr. Gram. and New Dict.	38	04	00	29	06	00
Gazetteer, 2d Part						
By Obſervation	38	28	07	27	24	45

Tri-

Tripoli in *Barbary*.	Latitude.			Longitude.		
Geogr. Gram. and New Dict.	33°	05′	00″	13°	50′	00″E
Gazetteer, 2d Part	41	40	00	23	24	00
By Obſervation	32	53	40	13	10	15

Thus we find the Situations by the Table in *Gordon* and the New Geographical Dictionary differ from the Obſervations, not only 10, 20, 30, and 40 Minutes, (the leaſt of which Errors is unpardonable); but even ſometimes 2 or 3 whole Degrees in the Latitude, and a great deal more in the Longitude. Whence it is evident, how little the Authors of thoſe Tables regarded Truth; or rather, how little they underſtood what they were about. They certainly were either utter Strangers to the Aſtronomical Obſervations extant; or elſe imagined, that the Situations, as given by the Maps, or former Geographers, were more to be depended on. As to the Gazetteer, what has been already ſaid in Note *C* is ſufficient.

PART IV. BOOK I.

CONTAINING

Technical GEOGRAPHY.

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CHAP. I.

Of the Technical Species, *particularly Repreſentatory* GEOGRAPHY.

BY the Technical Species, we underſtand thoſe which reſult from the Form or Manner in which the Deſcription is compoſed. **Definition.**

Theſe may alſo be termed the exhibitory Species, as relating to the Manner of exhibiting the Deſcription, which ſome denominate Practical Geography, but improperly, for the Reaſon given p. 48.

The Deſcription conſider'd as to Form is of three Sorts: The firſt exhibits the Earth, by a Draught or Delineation; the ſecond by Tables, or Regiſters; and the third by Treatiſe or Diſcourſe.

Hence Technical Geography may be divided into Repreſentatory, Synoptical, and Explanatory. **Kinds.**

Repreſent.] *Repreſentatory* or *Repreſentative Geography*, exhibits the Earth in a Repreſentation, or ſort of Figure, reſembling that of an Ichnographical Draught, or Plan. And this is what truly deſerves the Name of Geography, or a Geographical Deſcription.

End and Uſe.] The End of this Species is two-fold, General and Special: The firſt is to exhibit the Surface of the Earth, as in a Picture, ſo that the whole may be ſeen, as it were, at one View; whereby a more diſtinct and ſpeedy Knowledge of Geography may be acquired than by a written Deſcription. On which Occaſion a certain Author well obſerves, that the Eye will learn more in one Hour by Obſervation, than the Ear will benefit in a Day by Diſcourſe (a).

The ſpecial and chief End of Repreſentation, is to exhibit the Surface of the Earth, with the ſeveral Places and Countries thereof, according to their true Diviſion, Situation and Names; which are the three fundamental Articles of Geography, and indeed all that are capable of entring into a Geographical Repreſentation.

Conſtit. Parts. The Things to be conſider'd in a Repreſentation of the Earth are, (1.) The Projection of the Terreſtrial Circles. (2.) Scale of Meaſures. (3.) The Marks for exhibiting Things. (4.) The Manner of writing the Names of Places. (5.) The Accompaniments for Uſe or Ornament. (6.) The Subject, or exhibitory Matter. (7.) Form of exhibitory Matter.

I. The Projection of the Terreſtrial Circles, or Delineation of the Meridians and Parallels, differs according to the Form of the exhibitory Matter.

II. The Scales of Meaſures are of two Kinds; the one Aſtronomical, which are graduated on two of the Terreſtrial Circles, *viz.* the firſt Meridian and Equator; the other Itinerary, exhibited in ſome Part of the Repreſentation.

III. For want of Room, and to avoid Confuſion in the Repreſentation, all Circumſtances relating to Countries and Places, excepting their Names, are uſually expreſs'd by Symbols, or Marks; which are explain'd in ſome void Space of the Representation.

[1.] MARKS belonging to Aſtronomical GEOGRAPHY.

1. A Point in the Middle of the little Circle, exhibiting the Place; or a Line drawn thro' the Circle from Weſt to Eaſt,

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(a) *Fuller*'s Piſgah Sight, p. 5. in Appe nd. to Conſtr. of Maps, p. 154.

denotes a Town whoſe Latitude has been aſcertain'd by Obſervation.

2. A Line drawn thro' the Circle from North to South, denotes a Place whoſe Longitude has been determined.

3. The Circle croſs'd by two Lines, implies that both the Latitude and Longitude of the Place have been obſerved. Or,

4. To make the Thing ſtill more obvious, a Line had beſt be drawn under the Name of the Place, to denote the Latitude has been obſerved; and two Lines, to denote both Latitude and Longitude.

[2.] MARKS belonging to Geometrical GEOGRAPHY.

1. Itinerary Diſtances between Places, are marked by Figures or Dots, greater or ſmaller, made along the Roads.

2. The Bearing is expreſs'd by a Compaſs, or Rhumb Lines.

3. The Parts that have been laid down from Surveys, regulated by Aſtronomical Obſervations, may be diſtinguiſhed by plain or prick'd Lines, illuminated with a certain Colour *(B)*.

[3.] Marks belonging to Natural Geography.

1. Coaſts, or Edges of the Land, bounding Seas or Lakes, are repreſented by winding Lines, ſhadowed towards the Water.

2. Mountains and Hills, by ſhadow'd Heights.

3. Foreſts or Woods are figured by an Aſſemblage of little Trees.

4. Rivers are exhibited by ſerpentine Lines, double or ſingle, according as they are great or ſmall.

5. Heads of Rivers by a ſmall Well, or full Dot.

6. Marſhes, by faint Strokes, mixt with Dots.

7. Sands, by prick'd Beds.

8. Deſerts, by faint Strokes; and often by Beaſts, Birds, and Vegetables.

9. Fords in Rivers, by double prick'd Lines.

[4.] MARKS belonging to Civil GEOGRAPHY.

1. Bounds, or Frontiers of Countries, are mark'd by Lines, and ſometimes large Dots.

2. Bounds

(B) This Practice, which I have no where met with, would be of vaſt Uſe in recommending Maps, and ſhew the Authorities whereon they are grounded; about which a Geographer can never be too ſolicitous.

2. Bounds of Provinces, and leſſer Subdiviſions, by leſſer Dots.

3. Roads are marked with a double or ſingle Line, either plain or pricked, ſtraight or crooked.

4. Fields of Battle, by croſs'd Swords or Daggers.

5. Bridges, by two Parallel Lines acroſs Rivers.

6. Windmills are repreſented by a St *Andrews*-Croſs, on a Pivot or Cone.

7. Watermills, by a Circle with a Croſs in the middle.

8. Great Cities or Towns are expreſs'd by a little Plan, or an Aſſemblage of Towers and Steeples; middling and leſſer Places, by fewer Towers in Proportion.

9. Fortified Cities or Towns are marked with Angles.

10. Caſtles or Forts, with a little Flag added to the Circle; thus ♂.

11. Ruins, with the Flag either beaten down or reverſed.

Any other Qualities or Privileges belonging to Places may be expreſs'd by Marks.

1. A Parliament City in *France*, or Borough in *England*, which ſends Members to Parliament, may be marked by a Hand.

2. A Chamber of Accounts, or Court of Aids, by a Sun, or Circle upon a Point.

3. An Imperial City of *Germany* by a Spread-Eagle,

4. A Beglerbeglik, or Seat of a Governor of Great Provinces in *Turky*, by two Half-Moons. A *Sanjâklik*, or Reſidence of a *Sanjâk*, or Governor of leſſer Provinces, by a ſingle Half-Moon.

5. An Univerſity, or College, is commonly marked by a Star or Caduceus.

[5.] MARKS belonging to Eccleſiaſtical GEOGRAPHY.

1. An Archbiſhoprick is denoted by a double Croſs.

2. A Biſhoprick, by a ſingle Croſs or Mitre.

3. An Abbey, by a Shepherd's Crook.

Names. IV. With regard to the Names of Places: Thoſe of Villages are written in a Running-Hand; the Names of Towns in a larger Character; ſmall Cities in *Italick* Characters; great Cities in *Roman* Characters; ſmall Diviſions of Countries in ſmall Capitals; Provinces in larger Capitals; and the Names of Countries or Quarters in the largeſt Capitals of all.

V. The Ornaments to Repreſentations conſiſt, (1.) In Compartiments incloſing the Title of the Performance, the Scales of Miles, Directions to the Peruſer, and the like. (2.) In the Illumination or Colouring, which is applied along the pricked Lines, bounding Kingdoms and Provinces; and is of uſe to diſtinguiſh the Diviſions more eaſily by the Difference of the Colours; but Subdiviſions of Provinces are traced with the ſame Colour. Sometimes every Kingdom or Province is illuminated all over with the ſame Colour, which is not ſo convenient, becauſe in that Caſe the Subdiviſions cannot be ſo well diſcerned. **Ornaments.**

VI. The Subject or Matter wherein the Repreſentation is made, may be of Stone, Glaſs, Metal, Paper, or any thing elſe. **Subject.**

VII. The Form of the exhibitory Matter is either round or flat. Whence ariſes a vaſt Difference in the Repreſentation. **Form.**

A Repreſentation, therefore, is of two Kinds, according to the Subject; that on a round Superficies is called a Globe, and that on a Flat or Plain is denominated a Map. **Kinds of Repreſent.**

SECT. I.

Of GLOBES.

A Globe is a round Superficies, or Spherical Body, whereon the Earth is delineated. The Word comes from the *Latin*, *Globus*, which ſignifies a *Bowl* or *Ball*; as does likewiſe the Word *Sphere*, another Name belonging to it, derived from the *Greek*. **Defin.**

A Terreſtrial Globe is the true Image of the Earth, from which it differs only in Size: So that a Globe may properly be ſtiled the Earth in Miniature. It is termed a Terreſtrial Globe, to diſtinguiſh it from the Celeſtial; as alſo a Geographical Globe, in Oppoſition to the other, which is called the Aſtronomical. **Diff.**

The End of the Terreſtrial Globe is the ſame with that of Repreſentation; namely, to exhibit the ſeveral Parts of the Earth at one View, and in their true Situations, Figures and Proportions: Which grand Requiſites it is capable of performing to an abſolute Perfection. But if we take the Globe, with its Appurtenances, it has a farther **End.**

farther End or View; namely, to ſolve Problems, and explain ſeveral Phænomena relating to the Earth, its Inhabitants, the Seaſons, &c. which Application is commonly called the Uſe of the Globe.

Hiſt.

It does not appear clearly from Hiſtory, who was the Author of the Artificial Globe or Sphere. Some, with *Pliny*, ſay, the firſt was made by *Atlas*, and carried into *Greece* by *Hercules*. Others aſcribe the Invention to *Anaximander Mileſius*, 550 Years before Chriſt. *Diogenes Laertius* gives the Honour of it to *Muſæus*. Some to *Archytas Tarentinus*, and others.

It is no leſs difficult to determine the Time when the Terreſtrial Globe came into uſe, farther than to be employ'd in Armillary Spheres. 'Tis true, *Strabo* mentions the Terreſtrial Globe, and directs as to the Dimenſions of it (a); which ſhews it was then in uſe, but gives no light as to its Origin. However, as it cannot well be imagined, that the Antients applied the Globe to Geographical Uſes, before they were able to aſſign Places their Situations thereon; and the applying Geography, by which Means only that could be effected, was not thought of, till a long Time after *Anaximander*, we may therefore preſume, that there were no Terreſtrial Globes for exhibiting the Earth before the Time of *Pytheas* of *Marſeilles*, and *Dicearchus*; who both flouriſhed about the Year 320 before Chriſt. *Pytheas* is the firſt we find who determined the Poſition of Places Aſtronomically, by obſerving the Altitude of the Pole in that City (b); and *Dicearchus* is the firſt who regulated the Situations by a Parallel Line (c).

From that Time, therefore, we may preſume Geographical Globes came in uſe, and improved by degrees, as Obſervations of Longitude and Latitude were made; but it does not appear that they were common, or in any great Eſteem among the Antients: For ſeveral Authors, particularly *Strabo* and *Agathemeres*, who lived after *Ptolemy*, ſpeak not of any Globes publiſhed before their Time, altho' they are very careful to enumerate the Maps of the moſt conſiderable Authors.

From the *Greeks* Globes paſs'd to the *Romans*, and from them to the *Arabs*, *Perſians*, *Turks* and *Tartars*. But the *Chineſe* pretend to have had Globes many Ages earlier than any other Nation we know of; for their Hiſtories ſpeak of

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(a) *Strab.* Geogr. Lib. 2. (b) Vid. *Strab.* L. 2. (c) See Sect. 2.

a Sphere made by Order of the Emperor *Shun*, 2255 Years before Chriſt, wherein the Seven Planets were repreſented by Seven Gems, the Earth being placed in the Middle (a).

None of the Globes made in antient Times exiſt at preſent. The moſt remarkable one we meet with among the *Europeans*, after the Deſtruction of the *Roman* Empire, is the huge Silver Globe of *Roger* 1ſt, King of *Sicily*, who died in the Year 1151.

Of late Ages Globes have multiplied in moſt Countries where Geography is cultivated; and rendred very common, ſince the Contrivance of making Paper Globes has been practiſed.

The moſt conſiderable Globes that have been publiſhed in *Europe*, are thoſe made by *Mercator*, *Hondius*, *Janſſon*, *Blaew*, *Speed*, *Sanſon*, *De Wit*, *Berry*, *Seller*, *Morden*, *Du Val*, *De Fer*, *Nolin*, *De l' Iſle*, *Moll*, *Senex*, *Price*, and others.

From the Time that Globes came firſt in uſe, they were inſcribed with Meridians and Parallels, in conſequence of the Aſtronomical Form which Geography took: But it may be preſumed, that thoſe Circles were drawn more ſparingly, and not in the ſame manner as at preſent; that one Parallel, beſides the Equator, Tropics, and Polar Circles, might ſerve in the Time of *Dicearchus*; and that others were added by degrees, as Diſcoveries advanced, and the Poſitions of Places under different Parallels came to be determined, either by Aſtronomical or Geometrical Methods. It is probable therefore, that from the Time of *Eratoſthenes* Globes came to be inſcribed with Horary Parallels, to diſtinguiſh the Climates into which that Philoſopher began to divide the Earth (b), and that the ſame Method continued among the *Greeks*, and all the Nations which cultivated their Learning, down to Modern Times: But it muſt be obſerved, that they did not draw all the Parallels and Meridians, but reſtrained the Number of them to the Extent of the Repreſentation in their Globes, as they did in their Maps; as appears from *Ptolomy*, who ſpecifies the particular Circles of both Sorts that ought to be inſcribed thereon (c). The Globe of *Roger* 1ſt, King of *Sicily*, ſeems to have been divided according to the Climates, ſince the Book of *Al Edriſi*, which, we are told, was written to explain it (d), as well as the Abridgment of it, com-

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(a) Vid. *Martin.* Hiſt. *Sinic.* L. 1. p. 44. (b) See Climates. (c) *Ptol.* Geogr. L. 1. c. 23. (d) Vid. *Pocock* Hiſt. *Arab.* p. 373. & *D' Herbel.* Bibl. Orient. ad Voc. Edriſi, p. 310 & p. 391.

monly call'd the *Nubian* Geographer, are divided into Climates; but in the Globes of theſe later Times, the Parallels are drawn at equal Diſtances, as well as the Meridians.

Beſides the common Globes, we meet with ſome from Time to Time of an extraordinary Kind: ſuch was that of *Roger* King of *Sicily* juſt now mentioned; it was made of Silver, and weighed 800 Marks (a). There is one of Caſt-Braſs in the Obſervatory of *Nan-king* ſo huge, that three Men can ſcarce fathom it, ſtanding within a Cube of the ſame Metal; it is inſcribed with Meridians and Parallels, but without either Stars, or Cities on the Surface (b), and was placed there above 386 Years ago, that is, about 250 before the *Jeſuits* entred *China*.

Of late Ages Globes of ſurprizing Magnitude and Structure have been made in ſeveral Countries of *Europe*; as thoſe at *Gottorp*, by *Adam Olearius*; at *Norimberg*, by *Erhard Weigel*; at *Ausberg*, by *Chriſt. Treſler*; that of the Earl of *Caſtlemain*, and others (c).

A great Braſs Globe, five Feet Diameter, made by *Blaew*, and illuminated, was ſent by the *Dutch Eaſt-India* Company to one of the *Eaſt-Indian* Inſular Kings, at his Deſire. *Frederic*, Duke of *Holſtein*, cauſed a Globe to be made large enough for a Man to ſit in, and view the Heavens, which were exhibited on the concave Surface, as the Earth was repreſented on the Convex (d). But the moſt remarkable of all, is that at *Verſailles*, 15 Feet in Diameter, made by Father *Coronelli*, the *Venetian* Geographer, for the Cardinal *d' Eſtrees*, who preſented it to *Lewis* the XIVth King of *France*, about the Beginning of this Century; it weighs 2000 Pounds Weight (e). This, with the Celeſtial Globe, coſt the Cardinal 100,000 Florins, (or about 5,000 Pounds Sterling) and employ'd *Coronelli* ſeveral Years in making them (f).

Coronelli made Globes alſo of 60 Feet in Circumference, ſo contrived as to be eaſily taken to pieces, and convey'd any where, thro' a Door or Window, and then put together again by the help of Braſs-Screws. They were much more correct, complete, and better adapted to uſe, than the *Paris*

(a) Vid. Eoſd. ibid. (b) See *Trigaut*. ap. *Purchas* Pilgr. Vol. 3. p. 346. & le P. *le Comte* ap. *Fabric.* ubi ſup. p. 464. (c) *Fabric.* Bibl. Græc. Vol. 3. p. 465. (d) Vid. *Varen.* Geogr. Univ. Lib. 2. Sect. 6. Cap. 32. Prop. 5. (e) Vid. *Fabric.* ubi ſupr. (f) Vid. Nov. Literar. Vol. 2. p. 18, 19. An. 1718.

Paris Globes, and yet made at leſs Expence: Either ſort, with the whole Machine which ſupported them, might be moved any way by a Man with one of his Hands (a).

State.] Globes are brought to great Perfection at preſent, conſider'd as to their Structure, Appurtenances and Embelliſhments; but are very defective with regard to the Accuracy of the Repreſentation: Which is to be attributed partly to the want of Diſcoveries and Aſtronomical Obſervations, and partly to the Incapacity of their Makers; who have not made ſufficient uſe, if any at all, of the Itineraries and Obſervations, but copied from one another, or laid down Places according to bad Authors. But out of this Number, we muſt except the Globes of *Mercator, Hondius, Blaew, Sanſon, Morden*, and a few others, which were very good for their reſpective Times, but eſpecially thoſe of *de l'Iſle*, which far exceed all others for Accuracy: But we ſhall have occaſion to talk farther on this Subject when we come to treat of Maps.

Conſtit. Parts of a Globe.] The Things to be conſider'd in a Terreſtrial Globe relate either to, 1. The Body of the Globe; 2. The Repreſentation; 3. The Dimenſions; Or, 4. The Appurtenances.

Body.] 1. As to the Matter whereof Globes are made, [1.] Some are of Glaſs, like the Sphere of *Archimedes*, and that which *Cornelius Trebellius* preſented to our K. *James* I. [2.] Some of Iron, like thoſe two ſeen at *Paris*, by *Peter Ramus*; whereof one was brought from the Spoils of *Sicily*, by *Ruellius*, the Phyſician; the other was recovered from the *German* Wars, by *Orontius*, the Mathematician (b). [3.] Others are made of Braſs; of which kind was the Globe of *Blaew*, and that at *Nan-king* beforementioned. [4.] Some are made of Load-ſtone; but the Deſign of them is rather to ſhew the Phyſical Analogy there is between a Globe of this ſort call'd the *Terrella*, or little Earth, and the Earth itſelf, than exhibit Countries. [5.] Some are made of Silver, like the Globe of K. *Roger* (c). [6.] Some of Gems, as that of the *Chineſe* Emperor *Shun* (d). [7.] Others conſiſt of Wood and Plaiſter, cover'd over with Paper, whence they are call'd Paper-Globes; of which ſort are the Globes of *Coronelli* abovemention'd, thoſe of *Mercator*, *Sanſon*, *de l'Iſle*, and in general all the common or vendible Globes. [8.] *Laſtly*, Some are made of Ivory, which is employ'd often in ſmall Pocket-Globes.

(a) Vid. *Nov.* Literar. Vol. 2. p. 18. 19. An. 1718. (b) *Carpent.* Geogr. Part 1. p. 162. (c) See before p. 257. (d) Ibid.

Repreſent.] With reſpect to the Repreſentation, all the various Species of Geography may be exhibited by Globes, as well as Maps; altho' they are generally adapted to that of Civil Geography: The Circumnavigations, and Courſe of Sailing from one Part of the World to another, with the Monſoons, or Trade-Winds and Currents, are uſually marked thereon. If the Globe conſiſts of Ivory, Stone or Metal, the Repreſentation is commonly engraven thereon: If of Wood and Plaſter, it is firſt drawn on Paper, and then apply'd to the Surface, which is illuminated and varniſh'd, Cities being exhibited by Gold Specks.

Dimenſions.] 3. Globes are of various Dimenſions. [1.] Some of 3 or 4 Inches Diameter, as the Pocket-Globes; *Terrella's* are ſtill leſs. [2.] Some of 12, 18, 20 Inches, and 2 Feet, which are the Sizes of common Globes, however there are thoſe alſo of 3 Feet. [3.] Some extend to 5 Feet in Diameter, as the Braſs-Globe of *Blaew*; others to 10: Which Size, according to *Strabo*, a Globe ſhould not exceed (a); However, [4.] Some have amounted to 15, and almoſt 20 Feet, like thoſe of *Coronelli* already mention'd.

Appurtenances.] 4. The Appurtenances neceſſary for fitting out a Globe for Uſe are,

[1.] The Axis, repreſented by two Pieces of thick harden'd Wire faſten'd in the Poles of the Globe.

[2.] The graduated Brazen Meridian, within which the Globe is ſuſpended, and turns on its Axis.

[3.] The Braſs Horary Circle, faſten'd on the Top of the Meridian, with the Hours of the Day and Night graved thereon, and an Index belonging to it fix'd upon the End of the Axis.

[4.] The Horizon, which is a flat circular Frame, ſupported by a Pedeſtal, in both which there are Notches made for holding the Brazen Meridian, ſo as to move freely therein. On the Horizon is inſcribed the 32 Winds, the Kalendar,

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(a) *Strabo* Geogr. Lib. 2.

dar, the 12 Signs, the Amplitude Circle, and other things neceſſary for explaining the Uſe of the Globe.

[5.] The Quadrant of Altitude; which is a thin pliable Piece of Braſs, graduated with 90 Degrees, repreſenting a 4th Part of the Equator; it hath a Nut and Screw for the Convenience of faſtening it to any part of the Brazen Meridian, as Occaſion requires.

[6.] The Semi-Circle of Poſition, which is a narrow Plate of Braſs inſcribed with 180 Degrees, and anſwerable to juſt half the Equator.

[7.] The Box and Needle, or Compaſs, which always ſtands upon the Pedeſtal ready for uſe.

SECT. II.

Of MAPS.

Definit.] A Map is the Repreſentation of the Earth, or a Part thereof, in Plano, or on a flat Surface; and ſeems to be derived from *Mappa*, a Table Cloth, on Account of the Reſemblance which the Paper, or other Materials whereon it is exhibited, bears to a Table-Cloth; or elſe, according to ſome, the Linnen-Cloth whereon it is ſometimes paſted (a). Others ſay the Word comes from *Mapa*, a Picture, or Form of Plays ſo called (b).

The *Greeks* call'd a Map *Pinax*, and the *Romans* *Tabula*, both which Words ſignify a Table to eat at, which the Tables, or Boards, whereon Maps were originally drawn, reſembled; but ſince the Uſe of Paper, the Name has been changed amongſt the Moderns from the *Table* to the *Cloth*, to which it bears a greater Likeneſs. The Terms *Pinax* and *Tabula* are alſo applied to a Map, as they ſignify a Picture. The laſt Word is ſtill uſed by thoſe who write in *Latin* for a Map, as alſo for Geographical Tables; which, by that means, are ſometimes confounded together by Readers, for want of being duly diſtinguiſh'd by Authors. The *Peutingerian Tables* is the only Inſtance, wherein the Word *Table* is apply'd by us to a *Map*.

(a) *Carpent.* Geogr. p. 166. (b) *Du Cange* Gloſſ. Lat. p. 431.

Differ.] A Map differs from a Globe, not only as a flat or plain Superficies differs from a Spherical, but alſo in reſpect of the Prototype, or Object, the Earth; which the Globe truly repreſents, but the Map not at all, any more than a flat Table may be ſaid to repreſent a round Ball: Wherefore we may ſay, a Globe comes as near the Original as the Statue, a Map only as the Picture of a Man; the one ſhewing the Body in full Proportions, the other only the Lineaments of it (a).

End and Uſe. Maps have ſeveral Ends and Uſes: As, firſt, to exhibit the Parts of the Earth at one View; as alſo in their true *Situations*, *Figures* and *Proportions*: But theſe three laſt Requiſites they cannot perform with the ſame Accuracy as Globes, becauſe a Spherical Surface cannot be exhibited truly on a Plane by any Means whatever. A ſecond End of Maps is to ſupply the Want of large Globes, which become unwieldy, as well as coſtly, in proportion to their Bigneſs: Whereas a Map of larger Dimenſions may be afforded at a ſmaller Price; and being hung againſt a Wall, or rolled up, takes up little Room. Which Advantages compenſate, in a great meaſure, for their other Defects; for hereby Maps are not only more handy and ſuitable, but, being to be made of any Size, give a more complete and diſtinct Knowledge of Countries, than can be expected from common Globes. Moreover Countries may be exhibited ſeparately in particular Maps, but it would be ſtill more difficult to make convexical Segments or Portions of Globes, than Globes themſelves. In ſhort, tho' the Earth can never be exhibited in any degree ſo truly in a ſingle Map, as by the Globe; yet if the Earth be exhibited in ſeveral Maps, each not containing above 10 or 20 Degrees of Latitude, the Repreſentation will not fall very ſhort of the Globe for Exactneſs, in regard ſuch Maps joined together would form a Spherical Convex nearly as round as a Globe itſelf.

Maps therefore conſider'd in this Light are rather more uſeful than Globes: By them alſo the Climate, Latitude, Longitude, Diſtance, Bearing of Places, may be found, and other Problems ſolved, as by the Globe; which is call'd the Uſe of Maps. Maps alſo are uſeful in examining the Truth of Obſervations and Itinerary Diſtances.

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(a) *Conſtr.* Maps and Globes, p. 6.

Hiſt.

The Invention of Maps, doubtleſs, is very antient; but 'tis hard to trace their Origin. A certain Author vainly aſcribes it to *Tubal-Cain* (a), who lived before the Flood. We are told the *Egyptians* firſt meaſured the Earth, and engraved their Diſcoveries on Pillars (b); alſo that they kept Tables or Maps, whereon were comprized the Roads and Bounds of the whole Sea and Land (c); that Maps themſelves were invented by their King *Seſoſtris* (d), and that this Monarch left ſome with the *Scythians*, (or, as others ſay, the *Colchians*) whereon were engraven his Expeditions and Voyages (e), repreſenting with much Exactneſs the Earth and Sea, together with the different Roads (f). Theſe Maps were preſerved at *Æa*, a Town of *Colchos*, built by *Seſoſtris*, at the Confluence of the Rivers *Phaſis* and *Hippus* (g), and from that Time the *Colchians* kept the like Maps for the Uſe of Travellers. On the other hand, the *Babylonians* aſcribed the Invention of theſe Things to *Belus* (h) *Bel*, or *Baal*, the Founder of their Nation, whom they made very antient.

From hence it appears at leaſt that Maps were to be found very early in the Nations famous for Power and Learning. The Map of the *Perſian* Empire (for ſo it ſeems to be) which *Ariſtagoras*, Tyrant of *Miletus*, ſhew'd *Cleomedes* King of *Sparta* (i), is a preſumptive Proof that the *Perſians* had Maps *(A)*.

A learned Author ſuppoſes, that the Deſcription of *Canaan*, made by thoſe ſent by *Joſhua* to diſcover the Land (k), was both in Writing and by Map (l); altho' another queſtions whether ever the *Jews* had any Maps (m).

Among the *Greeks*, the Invention of Maps is aſcribed to *Anaximander* the *Mileſian* about 550 Years before Chriſt, who publiſh'd one of the World (a). Thoſe who after him ſignalized themſelves by publiſhing Maps of the World were, *Hecatæus Mileſius, Democritus Abderita, Eudoxus Rhodius, Dicearchus* and *Eratoſthenes*; but *Marinus Tyrius* and *Ptolomy* publiſh'd complete Sets or Syſtems of General and Special Maps.

(a) *Reimm.* Hiſt. Liter. Vol. 7. p. 120. (b) *Achilles Tatius* Comment. (c) *Apollon. Rhod.* Argon. 4. (d) *Euſtath.* Præf. ad *Dion. Charac.* (e) Id. in Not. ad eund. (f) *Apoll.* Rhod. ubi ſupr. 272. (g) *Dicearch.* & *Theopomp.* ap. Schol. ibid. (h) Vid. *Achil. Tat.* ubi ſupr. (i) Vid. *Herod.* Lib. 5. Sect. 49. (k) *Joſh.* xviii. 4, 6, 8, 9. (l) Vid. *Le Clerc.* Pref. ad *Sanſon.* Geogr. Sacr. (m) *Gundling* Hiſt. Philoſ. Moral. p. 70

(A) Alexander conſecrated a Map to *Jupiter Hammon*, reſembling that of *Ariſtagoras* (*a*), excepting that *Alexander*'s was of Gold, whereas the Map of *Ariſtagoras* was engraven on Plates of Braſs.

(*a*) *Wagenſeil.* Pera. Lib. Inv. Locul. 2. p. 27.

But none of the old *Greek* Maps remain, excepting thoſe made by *Agathodemon*, a Tradeſman of *Alexandria*, in the 4th Century, from the Tables of *Ptolomy*, to which they are commonly annexed.

From the *Greeks* Maps paſſed to the *Romans*, who were very fond of that ſort of Repreſentation.

A Map of the conquer'd Country was always carried in the Victor's Triumph (b). Under *Auguſtus* a large Map of the World was finiſh'd from the Memoirs of *Agrippa*, wherein the Emperor himſelf ſeems to have had a hand: It was exhibited in a great Portico, built for the purpoſe in the midſt of *Rome* (c), like that of *Lucullus*, where many Maps were expoſed to publick View (d). In ſhort, Maps were common in all the Provinces, which ſeem to have been Copies of the *Roman*. But for all this great Plenty, there are none remaining at preſent, excepting thoſe call'd the *Peutingerian* Tables; which yet are not properly Maps, but Exhibitions of the military Highways for the Uſe of the *Roman* Armies in their March.

The *Arabs* had Maps from the *Greeks*, and perhaps introduced them among the *Perſians*, who communicated them to the *Turks* and Weſtern *Tartars*, while thoſe of the Eaſtern *Tartary* had them from the *Chineſe*. The Hiſtories of this laſt Nation ſpeak of Maps of *China* as early as the Emperor *Yu*, 2207 Years before Chriſt (e); who cauſed the Nine Provinces, into which he had divided *China*, to be deſcribed on Nine Copper-Veſſels (f).

We have among us ſeveral *Chineſe, Perſian, Tartarian* and *Turkiſh* Maps, eſpecially the latter, both Manuſcript and Printed, not inferior to any in *Europe* for the Goodneſs of the Engraving, Colouring, and other Embelliſhments. In ſhort, moſt civilized Nations have Maps; nor are thoſe we call

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(a) Vid. *Strab.* Lib. 1. *Diog. Laert.* Lib. 2. N. 2. & *Agathem.* Compend. Geogr. Lib. 1. C. 1. (b) *Varen.* Geogr. Univ. Lib. 1. C. 1. (c) Vid. *Plin.* Hiſt. Nat. Lib. 3. C. 2. & Fragm. ad *Anton.* Itin. ap. *Simler*, p. 295. (d) *Varen.* ubi ſupr. (e) Vid. *Martin.* Sinic. Hiſt. p. 50. & P. *Complet.* Tab. Chron. Mon. Sinic. p. 4. (f) Ibid.

Savages, tho' unjuſtly, without them. P. *Lafitau* tells us, the *Americans* delineate Maps on the Barks of Trees, or the Sand, which are very exact, tho' not regulated by Aſtronomical Obſervations (a). And *De la Vega* ſays, the *Indians* of *Peru* made Models of their Cities and Provinces with Earth, particularly that of *Cuſco*, and the neighbouring Places.

After the Fall of the *Roman* Empire, Maps were not ſo common in *Europe* as before, till of late Ages. The moſt conſiderable we read of within that Period, are 4 Maps of the World: The 1ſt of Silver, belonging to the Emperor *Charlemain*, and bequeathed by him in his Will (b); the 2d deſcribed on 12 Skins of Parchment, by the Author of the *Colmar* Annals (c); the 3d made by the famous *Marco Polo* the Traveller about 1295, and kept in St *Michael*'s *di Murano*, at *Venice*, wherein are diſtinctly marked the *Cape of Good-Hope*, the Coaſt of *Zanzibar*, and the Iſland of St *Laurence* (*A*), as they are at preſent named (d); the 4th was drawn about 1306, by *Marinus Sanutus*; wherein alſo *Africa* is repreſented as an Iſland, the Coaſt of *Zinziber* expreſsly named, and the Iſland of *Madagaſcar* marked by the Name of *Pipis*. To which we may add two others of the ſame Author, one of the Coaſts of *Aſia Minor*, *Syria* and *Egypt*, and another of the *Holy Land*, all publiſh'd by *Bongarſius* (e). But within theſe laſt 300 Years Maps have multiplied even to Exceſs in moſt *European* Countries, and become very common by means of Printing with the Rolling-Preſs.

Ortelius, about the middle of the 16th Century, began to make a Body of Geography in Maps: Which Deſign was more completely accompliſh'd by *Mercator*, and their Improver *Hondius*. The Succeſs of theſe Attempts rais'd an Emulation in *Janſſon* and *Blaew*, towards the middle of the next Age, who ſtrove which ſhould make the moſt magnificent *Atlas*, and excel in giving the greateſt Elegance to

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(a) Vid. New Mem. of Liter. Vol. 9. p. 247. (b) Vid. *Eginard.* in Vit. *Carol.* Magn. (c) Vid. Annal. *Colmar.* ad Anno 1265. (d) See Giorn de Litt. An. 1686. p. 72. (e) Vid. Geſt. Dei per *Franc.* ap. Fin.

(*A*) *Marco Polo* in his Book alſo named at preſent; but calls it *Madaigaſcar*, as it is makes *Zanzibar* an Iſland (*a*).

(*a*) *M. Paul.* Venet. de Region. Orient. Lib. 3. Cap. 39 & 41.

Maps: But the *Sanſons*, who appear'd ſoon after, acquir'd more Applauſe by their Maps than all the former Geographers. At length *Du Val*, *Coronelli*, *De Fer*, and laſtly, *de l'Iſle*, at the beginning of the preſent Century, publiſh'd a new Set of Maps, which are by far the beſt extant. To theſe might be added the Sets made by certain Geographers, and adapted to their Geographical Syſtems, wherein they are inſerted: Such are thoſe of *Morden* and *Cellarius*.

As to the Improvements made from Time to Time in Maps, the firſt were drawn with Rhumb Lines, and Places laid down according to the Bearing and Diſtance (a): *Ant. Chr.* 318. But after the Time of *Dicearchus*, when Aſtronomy began to be applied to Geography, Maps came to be inſcribed with Meridians and Parallels, and the Poſitions marked according to Longitude and Latitude. *Ann. Chr.* 140. Projections were brought to Perfection in the Time of *Ptolomy*, if not in that of *Hipparchus*, who invented the Planiſphere 290 Years before. Indeed ſeveral new Methods of late Ages have been contrived of projecting the Planiſphere; and Attempts made to find out a Projection for particular Maps more conformable to the Globe than the Planiſphere, wherein two or three have been attended with Succeſs: But on Examination they all appear to be grounded on the ſame Principles (b), and the ſame at Bottom, with one or other of the two Methods given by *Ptolomy* (c), above 1500 Years ago; nor does it ſeem poſſible to invent more exact ones.

But it is otherwiſe with regard to the Repreſentation; Maps having received vaſt Improvements that Way from Time to Time, by the conſiderable Diſcoveries, and Number of exact Obſervations that have been made of the Latitude and Longitude, principally by the *Europeans* of late Ages.

Dicearchus, by help of a few Poſitions as to Latitude, publiſh'd a more correct Map of the World than any before him. Farther Diſcoveries enabled *Eratoſthenes* to do the like afterwards. Theſe, with Obſervations, encreaſing, *Marinus Tyrius* publiſh'd a copious Set of Maps or Tables, whereof his Contemporary *Ptolomy* gave a new Edition, with very conſiderable Amendments. The *Greeks* and *Romans* produced no better that we know of than thoſe of *Ptolomy*; but the *Arabs*

(a) See Part 3. (b) Ibid. (c) Vid. *Ptol.* Geogr. Lib. 1. C. 24.

Arabs improved them much with reſpect to ſeveral Parts of *Aſia* and *Africa*. After the Fall of the *Roman* Empire, the Maps of the *Europeans* rather dwindled than improved, as appears by thoſe of *Sanutus* (a), made about 1306; but on the Revival of Commerce with remote Parts, about 250 Years after, the Maps advanced apace, as Diſcoveries and Obſervations of the Latitude and Longitude encreaſed: Yet all the Geographers did not make uſe of them alike. *Ortelius*, *Mercator*, and the reſt of the early Geographers, rejecting the Obſervations by Eclipſes, as imagining they contracted the Continents too much, adjuſted the Poſitions as to Longitude by itinerary Diſtances: But *Hondius*, who came after, employ'd Obſervations inſtead of them. *Janſſon* and *Blaew* rivall'd one another in bringing Maps to Perfection: They added many Diſcoveries, diſtinguiſh'd the Bounds of Countries, Coaſts, *&c.* more exactly than had been done in former Maps, and rectify'd the Poſitions of a good Number of Places. The *Sanſons* excell'd them again with regard to Diſcoveries; but wholly neglecting the Obſervations of the Longitude extant in their Time, fell into ſeveral groſs Errors, which *Hondius* had corrected.

At length the Royal Academy of Sciences at *Paris* having, purſuant to their Deſign of reforming Geography, procured a good Number of exact Obſervations of the Eclipſes of *Jupiter*'s Satellites, to be made in ſeveral Parts of the Earth; they projected a large Planiſphere, or Map of the World, 27 Feet Diameter, on the Floor of the Weſtern Tower of their Obſervatory, which was finiſh'd in 1683 (b).

This Eſſay gave Riſe to ſeveral new Sets of Maps, which were publiſh'd ſucceſſively by *Morden* in *England*, *Coronelli* in *Italy*, *Du Val*, *Nolin*, *De Fer*, &c. in *France*. But thoſe Authors not having made ſufficient Uſe of the Itineraries and Obſervations, M. *de l'Iſle* undertook to compoſe a new Body of Geography in Maps, which he publiſh'd by degrees from 1700 to 1725, when he died: Whereby the Maps, tho' ſtill very defective, are brought nearly to as great Perfection, as the Diſcoveries, and other Materials extant at the Time he wrote, would admit of; which is all that can be expected from a Geographer.

(a) Ap. Geſt. Dei per Francos. Hiſt. p. 222, & 235.

(b) Vid. *Du Hamel* Reg. Scien

Upon the Whole it is obvious, that as Diſcoveries and Obſervations daily encreaſe, there will always be room from time to time for a new Set of Maps: And it appears from ſome late Performances, particularly M. *Strahlenberg*'s Map of the *Ruſſian* Empire (a), Mr *Kyrilow*'s Map of the ſame, with thoſe of *China* and *Tartary*, made by the *Jeſuits*, and publiſh'd by P. *Du Halde* (b), that M. *de l'Iſle*'s Maps ſtand in need already of great Alterations in thoſe Parts.

Kinds.

The Earth may be repreſented either in one Map, or many.

—Map of the World.

I. When the Repreſentation is by one Map, it is call'd *a Map of the World*, or *Terreſtrial Globe*; a *Geographical Map*; and ſometimes a *Planiſphere.*

[1.] It is call'd a *Map of the World (B)*, as who ſhould ſay, *the Table-Cloth of the World*, or *Terreſtrial Globe*: The Term *World*, which properly includes the whole Univerſe, being commonly given to the Globe of the Earth, which makes but a very ſmall Part of it.

[2.] *Geographical Map*, is a Name given to a Map of the whole Earth, to diſtinguiſh it from *Chorographical*, and *Topographical* Maps; that is, thoſe of Countries, and particular Places; as well as from a *Hydrographical Map*, or Chart.

[3.] *Planiſphere*, ſignifies a Sphere or Globe in Plano, or flatted; and implies as much as a Map which repreſents the Earth in a flat Form, or as if it was flat. It takes its Name from the Projection of the Terreſtrial Circles made uſe of in Maps, which is call'd a *Planiſphere.*

—Sets or Syſtems.

II. When the Repreſentation is by many Maps, it is call'd a Set of Maps, an Atlas, a General Collection of Maps, and a Body of Geography comprized in Maps.

(a) Prefix'd to his Account of the *Ruſſian* Empire, publiſh'd at *Stockholm.* (b) See his Deſcr. Geogr. Chron. &c. de la *Chin.* & *Tartar.*

(B) The *Italians* call it *Mappa Mondo*; whence the *Arabs*, *Turks* and *Perſians*, have framed the Word *Maba Mondi*, and *Mapa Mondi.* Theſe latter call them alſo *Kharthi* and *Kharthas*: Which laſt Terms are ofteneſt employ'd to ſignify Charts, as they all are indifferently ſometimes to expreſs the Art or a Book of Geography (a).

(a) *D'Herbel.* Bibl, Orient. p. 523.

The Maps contain'd in a Set or Atlas, are diſtinguiſh'd into General, and Special, or Particular Maps.

—General Maps.

General Maps are thoſe which comprize others under them, and repreſent in General, what the reſt exhibit more at large, and in Detail. In this Senſe, when the Set contains Maps of Kingdoms, Provinces, and leſſer Subdiviſions, as well as Quarters, thoſe of the *World*, *Europe* or *Aſia*, *Great Britain* or *France*, *Middleſex* or *Picardy*, may be call'd General Maps.

—Special Maps.

Special Maps are thoſe of the particular Parts into which the general are divided; in which Senſe all the Maps, excepting that of the World, are ſpecial: So that all Maps in the Set may be both general and ſpecial, excepting the Map of the World, which cannot be ſpecial; and that of a particular Place, which cannot be general.

Hence alſo it follows, that if the Set conſiſts of no more than Maps of the World and 4 Quarters, thoſe of the Quarters will not be general as well as ſpecial, becauſe they have no ſubordinate Maps: In like manner in Chorographical Sets (that is, thoſe which contain the general and ſpecial Maps of a Quarter, Kingdom, Province, or any Portion of the Earth leſs than the Whole) the principal or moſt general Map, ſuppoſing it to be that of *Europe* or *France*, is only general, becauſe it is ſuperior to the reſt, without being ſubordinate to any.

The Diſtinction therefore, of general and ſpecial Maps, belongs properly only to thoſe contain'd in Sets: For it would be needleſs, if not improper, to give the Name of general to a ſingle Map of the World, which in its own Nature is general, and aſſumes that Title in Collections of Maps, only on account of its being join'd with ſpecial ones (C).

(C) *Sanſon*, for want of conſidering this, has fallen into ſome Confuſion, as well as Error, in diſtinguiſhing the ſeveral Kinds of Maps, and explaining the Term of, *General Map:* For firſt he ſays, it agrees only to a Repreſentation of the whole Globe; and then, that the Geographers apply it alſo to all the Maps which repreſent in general, as thoſe of *Europe*, the Kingdom of *France*, and Province of *Picardy*. By Repreſenting in general, he underſtands contracting a Country, and only marking the moſt conſiderable Particulars (*a*). But in this Senſe the Term *General* might be extended both to his Particular and Topographical Maps, ſince they might be contracted, as well as thoſe of larger Regions.

(C) See *Sanſon* Introd. Geog. Part 1. Liv. 2. C. 3.

Conſtit. Parts.] The Things that fall under Conſideration in Maps concern either, 1. The exhibitory Form. 2. The Species of Geography introduced. 3. The Ornaments. 4. The Dimenſions. 5. The Proportion. Or, 6. The Subject.

Form. With reſpect to the Form, or Manner of Exhibiting, uſed in Maps, Three Things occur: [1.] The Projection. [2.] The Figure. And, [3.] The Poſition of the Map.

—1. *Project.* The Projections uſed in Maps differ according as the Repreſentation is of the whole Earth, a Quarter, or particular Kingdom.

[1.] With regard to Maps of the World. 1. Some are drawn after the Polar Projection, or Planiſphere. 2. Some, according to the Horizontal. 3. Others, to the Meridional; which is the Projection moſt generally uſed at preſent. 4. In ſome, *Wright's*, or *Mercator's* Projection is employ'd. 5. In others, the plain Projection, with equi-diſtant Parallels and Meridians: But of theſe two laſt, the firſt is apply'd moſtly to Charts, and the ſecond is grown obſolete.

[2.] With regard to Maps of the Quarters, or any large Portion of the Earth. 1. Some are exhibited according to the Meridional Planiſphere, or a Dilatation of it; as thoſe of *Africa* and *America*, laſt publiſh'd by *de l'Iſle*. 2. Others according to the Polar or Horizontal Projection, as the Maps of *Europe* and *Aſia*, by the ſame Author. 3. Some employ a Dilatation of the Stereographic Projection of the Meridional Planiſphere; of which ſort are the Maps of all the Quarters, by *Sanſon*, and his Followers.

[3.] As to Maps of particular Kingdoms, or leſſer Parts of the Earth, 1. Some employ *Wright's* Projection, but rarely. 2. Some the plain Projection, with equi-diſtant Meridians and Parallels, uſed moſtly in Maps of very ſmall Diſtricts. 3. Others, the plain Projection, with equi-diſtant Parallels, and inclining Meridians; of which Kind are almoſt all the Maps of *Sanſon*, *De l'Iſle*, and others.

—*Figure.* The Figure of Maps differs alſo, according as it is either a Map of the World, a Hemiſphere, or a Part leſs than a Hemiſphere.

[1.] With reſpect to Maps of the World, 1. Some are exhibited in a Square Figure, as thoſe drawn according to the Plain, and *Wright's* Projection. 2. Some, in an Oval Form, wherein the Meridians, terminating in the Poles, are

Curves; and the Equator and Parallels, either right Lines, as in the Map given by *Ortelius* in the Beginning of his *Theatre*, or elſe curved Lines, as in that made by P. *Matt. Ricci*: Wherein *China* was repreſented as ſituate in the Middle, and greater than the reſt of the Earth, according to the Opinion of the Natives (a). 3. Others, in two Circles, or flat Hemiſpheres; of which Kind are all thoſe projected agreeable to the Planiſphere (*A*).

[2.] Maps of half the Globe are exhibited, 1. Sometimes in a Square Figure; as thoſe drawn conformable to the Plain, and *Wright*'s Projection. 2. Sometimes in a Circle, or ſingle Hemiſphere, either with Meridians and Parallels, according to the Planiſphere; or elſe with Rhumb-Lines, as was in uſe ſometimes for repreſenting the Old World, before *America* was found out, according to the Map publiſh'd by *Bongarſius* (b).

[3.] Maps of Provinces, Kingdoms, Quarters, or any Portion leſs than a Hemiſphere, are uſually exhibited in a Square Figure, conformable to the Figure of the Paper, or other exhibitory Subject, in the ſame manner as *Great Britain*, *Germany*, *Europe*, or the *Ruſſian* Empire, are drawn. However, ſometimes Geographers indulge their Fancies, and accommodate the Repreſentation to the Figure of ſomething which it will beſt admit of. Thus *Holland* has been exhibited in the Form of a *Lyon*; *Spain*, in a *Lyon's-Skin* ſtretched between the Pillars of *Hercules*, as in the *Eſpagne Triomphant* of *de Fer*; the *Baltic Sea*, in the Figure of a *Man*, as in the Chart thereof inſerted in the firſt Volume of *Motray*'s Travels.

—*Poſition.*

The Poſition of Maps, with reſpect to the Part of the Repreſentation which ſtands uppermoſt, is various. 1. In ſome Maps the North Side of the Repreſentation reſpects the Top; in which Caſe the Eaſt Side will lye to the Right Hand, the Weſt Side to the Left Hand, and the South Side to the Bottom: Which Method is conſtantly obſerved in Maps of the World, the Quarters, and generally ſpeaking all other Maps. However, 2. Sometimes the Eaſt Side reſpects the Top, the South the Right Hand, the Weſt the Bottom, and the North the Left Hand. 3. Sometimes the South Side or Weſt Side ſtands uppermoſt.

(a) Vid. *Ricciol.* Geogr. Reform. Lib. 1. c. 6. p. 5. (b) Vid. Geſt. Dei per *Franc.* ap. Finem.

(*A*) A Map of the World made by *Orontius Finæus* in 1531 and publiſh'd in the *Novus Orbis* of *Grynæus*, repreſents the World in the Figure of a double Heart, inſtead of two Hemiſpheres.

Species. *—Natural.* Maps are of ſeveral Kinds, according to the different Species of Geography introduced. [1.] Some exhibit the Natural Geography, like that of *Canaan* in *Reland*'s *Palæſtina illuſtrata*, and a few others, deſcribing Countries by the Coaſts and Rivers, &c. *—Political.* [2.] Some conſiſt of Civil Geography, as the Generality of Maps do; others of Eccleſiaſtical Geography, as thoſe belonging to the *Geographia Sacra* of *Carolus a Sancto Paulo*; and ſeveral particular Maps of the *Sanſons*, *de l'Iſle*, and other Authors. *—Periodical.* [3.] Some exhibit the Antient Geography, as thoſe of *Agathodæmon* in *Ptolomy*, the *Peutingerian Tables*, the Collections of *Ortelius*, *Mercator*, *Wells*, &c. the Maps belonging to the *Notitia Orbis Antiqui* of *Cellarius*, and ſome particular ones of *Sanſon*, *de l'Iſle*, and other Geographers. To this Diviſion belong *Claſſical* Maps; which are thoſe adapted to the Antient Hiſtorians and Poets call'd *Claſſics*, whereof there are Sets publiſh'd by *Moll*, and others. Some give the Middle Geography, as the Maps belonging to *Al Edriſi*, *Abu'lſeda*, and other Oriental Authors; thoſe inſerted by *Bongarſius* in the *Geſta Dei per Francos*; that of *Marco Polo*; and a few by the *Sanſons*, *de l'Iſle*, and others. Some contain the Modern Geography, as the Sets of *Sanſon*, *Morden*, *Coronelli*, *de l'Iſle*, &c.

—Comparat. [4.] Of the Comparative Kind, ſome are Parallel, comprizing Antient, Middle and Modern Geography: Either mixt, in the ſame Map, as in particular Maps publiſh'd by moſt Geographers, or elſe in different Maps; as thoſe in the *Theſaurus* of *Ortelius*, *Atlas* of *Mercator*, Parallel Geography of *Brietius*, *Wells*, the Edition of *Ptolomy* by *Moletus*, *Maginus*, *Bertius*, and ſeveral other Sets of Maps. Others are critical, like the Map of *France*, made by the Academy of Sciences at *Paris*, wherein the Coaſts, as laid down by the *Sanſons*, are expreſs'd; that of *Italy*, *Greece*, and Part of *Africa*, drawn by *de l'Iſle*, both according to *Sanſon* and the Obſervations; alſo *de l'Iſle*'s Map of the *Caſpian* Sea, exhibiting the Figure of it according to various Authors, compared with the *Czar*'s Survey.

To theſe we may add Miſcellaneous or Hiſtorical Maps; whereof, 1. Some are accommodated to the Hiſtorians, as thoſe inſerted in Abbe *Vertot*'s *Hiſtory of the Knights of* Malta, *Abu'l Ghâzi Khân's Genealogical Hiſtory of the Tartars*. 2. Some are made to illuſtrate Antiquities, as that of *de l'Iſle*, inſerted in *Banduri's Numiſmata Imperii Romani*, containing all the Cities to which the Medals produced in the Work belong.

Repreſent.

With regard to the Repreſentation: 1. Some Maps make Aſtronomical Obſervations the Baſis of them; as thoſe of *Ptolomy, Hondius, Janſſon, Blaew*, the Royal Academy at *Paris, Morden, de Fer, Coronelli, de l'Iſle*, and their Copiers: In others, the Situation of Places, as to Longitude, is adjuſted wholly by the Itinerary Diſtances; as thoſe of *Mercator, Ortelius, Sanſon*, and their Copiers, or Imitators. 2. Some have the Roads thro' Countries, with the Itinerary Diſtances *(A)*; which are expreſs'd either in Figures, as in the *Peutingerian* Tables, ſome Maps of *England*, &c. or elſe by larger and ſmaller Dots, as in ſome late Maps of *France*, &c. 3. Others have the Roads without the Diſtances, as the Itinerary Maps of *du Val*, ſeveral of *de l'Iſle's*, and the *Engliſh, Dutch*, &c. Copies of them. 3. In ſome Maps, the Places whoſe Latitude and Longitude have been determined by Obſervation are diſtinguiſhed by Marks; as in the Map of *France* inſerted in the *Connoiſſance des Temps*, and in thoſe exhibiting the Courſe of the *Meridian Line*, drawn thro' that Kingdom (a). 4. In others, the Names of remarkable Places, whoſe Situations are uncertain, are inſerted in a Corner of the Map; as in many of thoſe publiſh'd by *Ortelius*. 5. Some exhibit the Vouchers for the Obſervations whereon they are grounded; as the Map of *Germany* by *Homan*.

Ornaments.

Maps are often ſet out with the Plans and Proſpects of Cities, Caſtles, Palaces, Ports, Bays, Streights, Mountains; alſo with Cuts, repreſenting the Cuſtoms of People, Animals, Vegetables, or the like; Of this Sort are the Maps of *Speed*, ſome of thoſe publiſhed by *Moll*, and others; but thoſe of *de Fer* exceed all for the Beauty and Variety of the Embelliſhments (*B*).

(a) See Mem. Acad. Scienc. *Par*. An. 1718.

(A) In the moſt antient Maps, as thoſe publiſh'd by *Hecatæus, Democritus, Eudoxus*, and others, for the Inſtruction of Youth, Places were marked with their Poſitions and Diſtances *(a)*.

(a) Vid. *Euſtath*. Præf. ad Not. in *Dionyſ*. Perieg.

Dimenſions. Maps are of various Dimenſions, from a few Inches to a great many Feet in Length and Breadth. Thus *de Fer's* Map of *Spain Triumphant* is between 5 and 6 Feet long, and 4 and 5 broad. The *Peutingerian* Tables are 20 Feet long and 1 broad; and the Map of a Diſtrict in the Province of *Peking* in *China*, made lately by the *Jeſuits*, is 20 Feet Square.

The Length of a Map, according to *Strabo*, ought not to exceed 7 Feet: But the Size of common Maps at preſent is uſually adapted to that of the Paper they are drawn on, and eſtimated by the Page or Sheet, and not by the Meaſure.

Of thoſe Maps whoſe Dimenſions are eſtimated by the Page or Book, 1. Some may be call'd *Duodecimo* or *Octavo* Maps; as thoſe inſerted in *Eachard's Compendium of Geography*, *Gordon's Geographical Grammar*, and the *Complete Geographer*. 2. Some are *Quarto* Maps; as thoſe in *Morden's Geography*, *Sanſon's Deſcription of the Univerſe*, the *Notitia Orbis Antiqui* of *Cellarius*, &c. 3. Some in a ſmaller *Folio*; as thoſe in the Coſmography of *Heylin*, the *Engliſh* Tranſlation of *Sanſon* by *Brome*, the leſſer Set of *Viſcher's* Maps. 4. Others in a larger *Folio*, as thoſe belonging to the *Theatre* of *Ortelius*, and the *Atlas's* of *Mercator*, *Bleaw*, *Janſſon*, and others.

The Maps whoſe Dimenſions are eſtimated by the Sheet, are of a larger Size than any of the former, containing about 2 Feet 4 Inches in Length each. Of theſe, 1. Some are Sheet Maps; as thoſe of *de Wit*, *de Fer*, *de l'Iſle*, the larger Sets of *Sanſon* and *Viſcher*, and moſt others. 2. Some are two Sheet Maps; as thoſe in the Sets publiſh'd by *Senex*, *Price*, *Moll*, *Wildey*, &c. 3. Others are four Sheet Maps; as thoſe of the Quarters by *de Fer*, and of particular Kingdoms of *Europe* by ſeveral Hands. 4. Some conſiſt of ſix, eight, ten, and twelve Sheets; as the Map of *Hungary* publiſh'd

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(*B*) The Journaliſts *de Trevoux* ſay, *de Fer* will always have the Glory of being the Firſt who in Maps joined the Hiſtory and Deſcription together (*a*). Maps of this Sort are of great Uſe as well as Ornament; exhibiting, as in a Picture, both the Geography and Hiſtory of a Country (*b*).

(*a*) Mem. *de Trev.* Tom. 73. p. 547. An. 1719.

(*b*) See Conſtr. of Globes and Maps, Append. Ch. 3. p. 155.

liſh'd at *Nuremberg* in 1684, and one of the World, drawn by the Author of the *Colmar* Annals, on twelve Skins of Parchment (a). 5. Some even of fifteen Sheets, as *de Fer's* Map of the *South Sea*.

The Proportion obſerved in Sets reſpects either the Parts or the Whole.

Proportion.

With regard to the Parts the Maps of *Europe* are uſually more numerous than thoſe of the other Three Quarters together, every Kingdom having its particular Map; and ſometimes one Country is divided into ſeveral.

Subject.

Stone, Metal, Wood, or any other Subſtance, may be the Subject or Matter for delineating Maps on. Some have been made on Braſs Plates, like that of *Ariſtagoras*; ſome on Plates of Silver, like that of *Charlemagne*; ſome on Golden Plates, as that of *Alexander*; and at preſent they are commonly firſt engraven on Copper, and then printed off by a Rolling-Preſs on Paper, Parchment, Silk or Linnen. Sometimes Maps are drawn on Walls, like that of *Italy*, ſeen by *Varro*, in the Temple of the Goddeſs *Tellus* (b) at *Rome*; ſometimes on Floors, as that of the World in the Obſervatory of *Paris*; ſometimes on Playing-Cards, as has been already obſerved, p. 31.

To make compleat Maps, the Geographer ſhould obſerve 6 Things.

1. To mark the Places, whoſe Situations have been determined Geometrically, or by Aſtronomical Obſervations. 2. To exhibit the Roads as given by Travellers and Geographers thro' the Country, annexing the itinerary Diſtances; and, if practicable, the Names of the Travellers. 3. To mention whence Longitude is computed (*A*). 4. To inſert the Obſervations themſelves, whereon the Map is grounded, in ſome empty Space. 5. To give a Liſt of the remarkable Places, whoſe Situations are uncertain, and of moſt Importance to be known. 6. To write the Names of Places according to the Orthography of the Natives, as well as that of the Geographer; and, if

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(a) Vid. Ann. Colon. ad Ann. 1265.

(b) Vid. *Varr. de R. R.* L. 1. C. 2.

(*A*) In every Map, whether belonging to a Set or not, mention ſhould be made from whence Longitude is computed. The Want of this Care, which is ſeldom taken, often leads the Reader into Doubts and Miſtakes.

practicable, to ſpecify the ſeveral Names which any Place has had. A late Author has given a Specimen of a Map (a), wherein the firſt, ſecond, and fourth Requiſites do enter; but none elſe have been yet made, which take in thoſe three, much leſs all the ſix.

CHAP. III.

Of Synoptical GEOGRAPHY.

Defin.

SYnoptical Geography is that ſort of Form which exhibits the Earth by way of Geographical Tables; wherein the Deſcription is made by ranging the Names of Countries and Places in Liſts or Catalogues one under another, beginning at the Top of the Page, and going down towards the Bottom.

Etym.

The Word, *Tables*, comes from the Latin, *Tabula*; which in one Senſe ſignified a *Regiſter*, or Entry-Book. The ſame Word alſo among the *Romans* ſignified a *Map*; Whence, for want of Diſtinction, Confuſion ſometimes ariſes in Latin Authors, both antient and modern, as we have already obſerved. This ſort of *Tables* was by the *Greeks* call'd *Canon*; and ſo thoſe in *Ptolomy*'s Geography are call'd *Canons*. They are named by the *Arabs*, *Takwim (A)*, *Zij (B)*, and ſometimes *Kânûn (C)*, a Word made from the *Greek*. They are call'd Geographical Tables to diſtinguiſh them from Maps, as alſo from Chorographical Tables. *Alſtedius* calls them Logical Tables (b), as conſiſting barely of ſingle Words, or Names of Places. They are alſo term'd *Synoptical Tables*, to denote their exhibiting Things at one View, like an *Inventory* or *Brief*. The ſame Author makes Tables a kind of Repreſentation (c); but we chuſe to conſider 'em as a ſort of middle Form between Maps and Explanatory Syſtems.

(a) See Conſtr. of Maps and Globes, Part 1. Ch. 14. p. 84. (b) *Alſted.* Encycl. Vol. 1. p. 575. (c) Ibid.

(*A*) The *Takwim al boldân*, is the Table of Countries, by *Abu'lfeda*.

(*B*) The *Zij*, *Khowuja Naſir al Tuſi*; that is, the Table of *Khowaja Naſir* of *Tus*, a City in *Perſia*, the ſame with *Naſir addin*.

(*C*) The *Kânûn* of *al Biruni*.

Differ. They differ from Maps, becauſe no Repreſentation is employ'd; and from Explanatory Syſtems, becauſe Explanations or Diſcourſe is not uſed: Beſides, they are purely Geographical. All Tables are in their Nature Analytical, as reſolving the Deſcription into its conſtituent Parts.

End. The End of Geographical Tables is to give a ſuccinct and comprehenſive View of the Earth; whereby they in ſome meaſure anſwer the Uſe of Repreſentations, and are, ſo far, more uſeful than Explanatory Syſtems. Another End of them is to preſerve the Obſervations, and give them more preciſely than they can be taken from Maps, as alſo to furniſh Materials for drawing Maps. Thus the Maps annext to *Ptolomy*'s Tables were drawn from them by *Agathodæmon*; and *Caſtaldo* delineated Maps of *Aſia* and *Africa* chiefly from the Tables of *Abu'lfeda*. The late M. *Reland* publiſh'd a Map of *Perſia*, drawn from the Tables of the Oriental Geographers. A third End of Tables, is to be a Guide or Index in ſtudying Maps.

Hiſt. Geographical Tables ſeem to have been the firſt Methods in Uſe of exhibiting Geography. Some think that the Deſcriptions of the Sea and Land left by *Seſoſtris* in *Colchis*, and other conquer'd Countries, were of this Kind. The firſt Geographical Tables we meet with amongſt the *Greeks* are thoſe of *Hipparchus*; which, according to *Pliny*, contain'd the Latitudes of divers Towns and Countries (a). The next we find are the Tables of *Marinus Tyrius*, and his Improver *Ptolomy*, who both digeſted their Works moſtly in that Form.

The Oriental Aſtronomers have publiſh'd a great Number of Geographical Tables; whereof thoſe of *Naſir addin*, and *Ologh beigh* (*D*), are very much eſteemed in the Eaſt. The Tables inſerted by *Abu'lfeda* in his Geography (*E*), are collected

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(a) *Plin.* Hiſt. Nat. L. 2. C. 12.

(D) Theſe Tables were firſt publiſh'd by *Greaves*, with a *Latin* Verſion, in 4to, and then reprinted by *Hudſon* in the 3d Volume of his *Geographiæ veteris Scriptores Græci minores.*

(E) His Deſcription of *Arabia*, *Khowarezm*, and *Ma wara'lnahr*, were alſo publiſh'd by *Greaves*, and then by *Hudſon* in the ſame Volume of his minor *Greek* Geographers. *Thevenot* has publiſh'd his lected from ſeveral Authors, particularly four, *al Birûni, al Faras, Ebn Saïd al Maghrebi*, and *Ptolomy*, whereof he prefers *al Birûni*. We have the *Perſian* Tables of *Khryſococca* (a); ſome alſo relating to *Perſia*, and the neighbouring Countries, have been given us by *John de Laët* (b), and *Tavernier* (c). *Hinkleman* mentions thoſe of *Abu Iſhâk* (d); and we find the Names of many more, whoſe Tables are not yet come into *Europe*, in the *Bibliotheque Orientale* of *D'Herbelot*. But we are told none of the *Arab* and *Perſian* Tables are exact, beſides thoſe of *Naſir addin* and *Ologh beigh* beforementioned (e); which yet are in a great Meaſure uſeleſs, for want of diſtinguiſhing the Situations that were obſerved, from thoſe which are only eſtimated by the Itinerary Diſtances, or taken upon truſt from other Authors, as many of them apparently are.

The *Europeans*, on the Revival of Learning, began to collect the Aſtronomical Obſervations which were made from time to time into Tables; ſuch as thoſe of *Kepler, Wendelin, Bullialdus, Albertus Limennus* (f), and ſome others collected by P. *Riccioli*, who has out of all the Obſervations Antient and Modern made the moſt complete Tables (g) publiſh'd till the time he wrote, in 1662. But ſince then, more exact Obſervations being made in greater Number than before, more correct Tables were publiſh'd; ſuch as thoſe of *Street* (h), *de la Hire* (i), *Harris* (k), the *Paris* Academy of Sciences (l), P. *Noël* (m), P. *Souciet* (n), and one or two more. As for other Tables, the Latitudes and Longitudes are generally taken from the Maps, or pick'd up any where elſe, without either Care or Judgment; as appears from their contradicting often the moſt common as well as eſteem'd Obſervations, which have eſcaped the Authors Notice. Of this Kind are the Tables of *Hughes* in his *Uſe of the Globes*, and *Heylin* in his *Coſmography*; that given by *Wolfius* in his *Elementa Mathematica*; thoſe added to the laſt Editions of the *Geographia Antiqua* of *Cellarius*, *Gordon*'s *Geographical Grammar*, &c.

(a) *Hudſon* Geogr. vet. Græc. Min. Vol. 3. (b) *De Laet Perſia* Stat. [illegible] Reſpubl. (c) *Tavern.* in his *Perſian* Trav. (d) *Hinkl.* Pref. ad *al Korân Arab.* (e) *Renaud.* Anc. Relat. Pref. p. 33. (f) Vid. *Riccioli* Geogr. Reformat, p. 375. (g) Ibid. p. 352. & p. 402. (h) *Street* Ephem. (i) *De la Hire.* (k) *Harris* Lex. Tech. (l) In the Conoiſſance de Tems. (m) *Noel* Obſ. Math. and Phyſ. (n) *Souciet* Obſ. Math. &c. ad fin.

his Tables of *Sind* and *Hind*, or *India*; and *Ramuſio*, that of *Armenia*, and the neighbouring Parts, in their reſpective Collections of Voyages and Travels.

The Whole has been tranſlated 4 or 5 times, and loſt; but is at laſt put to the Preſs, as I am informed, by Mr *Gagnier*.

None of theſe Tables may be ſaid to be complete or ſufficient for compoſing a Body of Geography, excepting thoſe of *Riccioli*, or *Souciet*: Beſides, they are all digeſted alphabetically. Indeed *Sanſon* about the middle of the laſt Age formed a Syſtem of Geography by Tables; which moſt of the Geographers ſince, as well of other Nations as the *French*, have copied with very little Alteration, if any, for the better. But in this, *Sanſon* only revived a Method practiſ'd by the Antient Geographers, without inventing any thing new: Beſides, they contain nothing but the bare Names of Places, and Diviſions of Countries, without the Situations; ſo that his Tables fall vaſtly ſhort of *Ptolomy*'s for Uſefulneſs.

Conſtit. Parts.

The Things to be conſidered in Tables are, 1. The Exhibitory Form. 2. The Species of Geography introduced. 3. The Poſition of Places. 4. The Proportion. 5. The Subject.

Form.

The Form of Geographical Tables is threefold; Synthetical, Homogeneal, and Alphabetical.

—*Synth.*

1. The Synthetical conſiſts in ranging Countries and Places in their Natural Order in Syſtems: Whence thoſe of this Claſs may properly enough be called *Syſtematical Tables*, and the Geography exhibited by them *a Syſtem of Geography*. *Alſtedius* (a) and *Sanſon* (b) give them the Name of *Methodical Tables* on the ſame Account. And to this ſort chiefly the Name of *Synoptical Tables* is uſually applied.

Synoptical Tables are either publiſh'd ſingly by themſelves, as thoſe of *Naſir addin*, *Ologh beigh* (and other Orientals) *Sanſon*, his Copier *Deſeine*, *Hubner*, &c. or inſerted in Geographical Syſtems, as thoſe of *Ptolomy*, *Abu'lfeda*, *Gordon*, *Luytz*, the *Complete Geographer*, &c.

—*Homogeneal.*

2. The Homogeneal Form conſiſts in ranging the Parts of the ſame Kind together, like the Tables inſerted in the *Coſmography* (as it is intitled) of *Æthicus*; where Liſts are given of the principal Seas, Iſlands, Mountains, Provinces, Cities, Rivers and Nations. And in the Tables of the Natural Diviſion of the Land and Water, found in the firſt Part of *Gordon*'s *Geographical Grammar*, and other Authors.

3. The

(a) *Alſted.* Encycl. Vol. 1. p. 575. (b) *Sanſon*'s Introd.

Alphabet. 3. The Alphabetical Form conſiſts in ranging Places according to the Letters of the Alphabet. The Tables of this Kind are commonly inſerted in Aſtronomical or Geographical Books, ſuch as the Tables of *Hughes* in his *Uſe of the Globes*, P. *Riccioli* in his *Geographia Reformata*, *de la Hire* in his *Obſervationes Aſtronomicæ*, the Academy of *Paris* in the *Connoiſſance des Tems*, P. *Souciet* in his *Obſervations Mathematiques*, &c.

Species of Geogr. With reſpect to the Species of Geography; 1. Some Tables include Natural and Civil Geography; as thoſe of *Ptolomy*, *Æthicus*, *Sanſon*, and his Copiers, *Riccioli*, *Souciet*, &c. Others Civil Geography, as thoſe of *Naſir addin*, *Abu'lfeda*, *Ologh beigh*, *de la Hire*, the *Connoiſſance des Tems*; ſome Eccleſiaſtical Geography, as the Tables of *Commanville*. Some exhibit Antient Geography, as thoſe of *Ptolomy*; ſome Middle Geography, as the Tables of *Naſir addin*, *Abu'lfeda*, &c. Others Modern, as thoſe of *Sanſon*, *Riccioli*, and moſt of the reſt. 3. Some give a Parallel Geography of the Antient, Middle and Modern; as thoſe of *Brietius*, *Riccioli*, *Ortelius* and *Baudrand*, at the End of their Dictionaries, *Commanville*, and others. 4. Some Tables exhibit a Critical Geography; of which ſort ſeveral are to be found in *Riccioli*'s *Geographia Reformata*, comparing the Dimenſions of the Earth and Poſitions of Places, as given by different Authors.

Poſition. With reſpect to the Poſitions of Places; 1. Some Tables mark only the Country and Province where they are ſituated; as thoſe of *Sanſon* and his Followers, *Robbe*, *Luytz*, *Gordon*, the *Complete Geographer*, &c. 2. Some add the Diſtances; as the Itinerary of *Antoninus* (*A*). 3. Others, inſtead thereof, give the Latitude and Longitude; as the Tables of *Ptolomy*, *Naſir addin*, *Abu'lfeda*, *Ologh beigh*, *Khryſococca*, *Riccioli*, *Street*, *de la Hire*, *Harris*, the *Connoiſſance des Tems*, *Souciet*, and others of leſs Note. 4. Of theſe laſt, ſome diſtinguiſh the Situations determined by Obſervation from thoſe which are not, either by adding the Names of the Obſervers, as the Tables of

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(*A*) The *Nubian* Geographer, or rather the Geography of the *Nubian*, and thoſe other Geographical Compoſitions amongſt the *Orientals*, written by way of Itineraries, differ but little from Tables: To which they might be converted, only by changing the Method of ranging the Names of Places.

of *Riccioli*, and P. *Souciet* (*B*), or uſing Marks, as that in the *Connoiſſance des Tems*; all the reſt are deſtitute of Vouchers, and conſequently not to be relied on (*C*).

Proportion.

As to the Quantity of the Matter introduced; 1. Some Tables are more copious and particular, as thoſe of *Ptolomy*, *Abu'lfeda*, *Riccioli*, *Sanſon*, *Souciet*. 2. Others more general and ſcanty, as thoſe of *Æthicus*, *Khryſococca*, *Street*, *de la Hire*, *Eachard*, the *Connoiſſance des Tems*, and moſt others.

Subject.

Tables are exhibited either in ſingle Sheets, like Maps, as the Synoptical Tables of *Wells*; or printed in Books.

Plan.

In order to make complete Tables, five Particulars ſhould be obſerved by the Geographer; 1. To give the exact Diviſions of Countries, with the Rivers, Mountains, Lakes, &c. in each according to *Ptolomy*'s Method. 2. To give the Longitude and Latitude of every Place. 3. To inſert the Itinerary Diſtances. 4. To diſtinguiſh the Poſitions that have been determined by Obſervation from the reſt, and cite the Authors or Obſervers. 5. To mark at the Head of the Table from whence Longitude is computed. No Tables hitherto made have all theſe Requiſites.

CHAP.

(*B*) *Abu'lfeda* has cited his Authors, whence he took his Poſitions: But they are only the Authors of Tables like his own, not the Obſervers themſelves; beſides, they differ from each other ſometimes whole Degrees.

(*C*) The famous M. *de l'Iſle*, in his new Map of *Aſia*, and all the reſt which comprize *Syria* and *Meſopotamia*, following the Tables of *Naſir addin* and *Ologh beigh* with reſpect to the Latitude of *Haleb* or *Aleppo*, which he puts at 35° 50', and rejecting them as to that of *Rakkah* on the *Euphrates*, which he puts at 35 Deg. errs as to both: For *Aleppo* was found by ſeveral accurate Obſervations to be in 36° 30' (*a*), and *Rakkah* was found by (*al Battâni*, commonly called *al Bategni*, the Aſtronomer) in 36° (*b*), according to the Tables, or rather one Minute more. Which Obſervations (as well as that made at *Bir*, on the ſame River, by *Maundrel* (*c*), who found the Altitude 37° 10') had eſcaped M. *de l'Iſle*'s Notice: In conſequence whereof, he hath laid the North Parts of *Syria* a whole Degree too low in his Maps, and contracted it another Degree too much from Weſt to Eaſt; whereby alſo *Meſopotamia* is affected in Proportion. Whence it appears, that Geographical Tables without their Vouchers are of little or no uſe.

(*a*) See *Lowth*. Abridg. Phil. Tranſ. Vol. 3. p. 525. (*b*) *Al Bategni* de Scient. & Mot. Stel. C. 5. (*c*) *Maundr*. Journey to *Bir*, at the End of his Journey to *Jeruſalem*.

CHAP. IV.

Of Explanatory GEOGRAPHY, *and its* Species, *particularly* SYSTEMS.

ANALYSIS, *and Explication of the* Terms.

Definit. BY *Explanatory Geography*, we underſtand *a Deſcription of the Earth in a Book by Writing*: In which Senſe it ſtands oppoſed to *Repreſentatory Geography*; from which it differs, in that it expreſſes by Words what in the other Species is exhibited by Points, Lines, Circles and Symbols.

End. Its End is to explain Things more fully, and in detail, which are barely exhibited to the Eye in the Repreſentation; to inſtruct the Student in the Knowledge of the Science in a methodical Manner, and give a more preciſe Account of the Situation of Places, by way of Diſcourſe, than can be obtain'd from the Generality of Globes and Maps: In ſhort, not only to ſerve inſtead of theſe latter, but even to ſupply ſome of their Defects.

Diviſion. *Explanatory Geography* may be divided into *Synthetical* and *Analytical*.

Synthetical Geography treats of Matters in a connected Diſcourſe, deſcending from Generals to Particulars; of which kind are *Geographical Syſtems*.

Analytical Geography treats of Matters ranged out of their natural Order, and independent of one another: Of which kind are *Geographical Dictionaries*.

Of theſe two ſorts of *Explanatory* Methods we ſhall treat diſtinctly, and firſt of *Syſtems*.

Geographical Syſtems are of two Kinds, General and Special.

SECT. I.

Of GENERAL SYSTEMS.

Etymol. A *General Syſtem* of *Geography* is ſo called, as containing a Treatiſe of *General Geography*.

End. Its End is to explain the ſeveral Matters relating to the Science previous to the Knowledge of ſpecial Geography, after the manner of this Book, which is itſelf a Syſtem of General Geography.

Hiſt. General Syſtems are doubtleſs of great Antiquity, altho' none have come to our Hands ſolely of the Kind, excepting that of *Agathemeres*, who lived in the Third Century. However moſt of the ſpecial Syſtems of the Antients ſeem to have been preceded by Treatiſes of General Geography, as we have Reaſon to conclude; particularly thoſe of *Timoſthenes Rhodius*, *Eratoſthenes*, *Hipparchus*, *Marinus Tyrius*, *Artemidorus Epheſus*, and ſeveral others mentioned in the following Account of ſpecial Syſtems, as well as thoſe of *Strabo* and *Ptolomy*, which ſtill remain.

That there are general Syſtems among the *Arabs*, *Perſians* and *Turks*, appears from ſeveral Authors, particularly *d' Herbelot*; but we have ſeen none of them, excepting the *Tuſat il Kebar*, by *Haji Khâlfa*, an eminent *Turkiſh* Author, lately printed at *Conſtantinople*, in 1728. It treats of the Terreſtrial Globe, Sphere and Maps; is adorned with a Map of the World, Charts of the *Mediterranean*, *Black Sea*, and *Gulf* of *Venice*; and Cards of the Mariners Compaſs for the *Mediterranean* and *Ocean*.

Of late Ages, ſince the Revival of Navigation and Commerce, numerous Treatiſes have been written relating to General Geography. Beſides thoſe that handle particular Parts, we have ſeveral more complete: as the Coſmography, or Geographical Inſtitutions, of *Appian*, with the Improvements of *Gemma Friſius*; the *Coſmography* of *Maurolycus*, the *Coſmographical Rudiments* of *Honter*, the *Coſmographical Sphere* of *Dodonæus*, &c. But we had none that might be called complete and methodical Syſtems before the beginning of the laſt Age: The chief that have appeared ſince then are, the *Geography* of *Carpenter*, that of *Alſtedius* in his *Encyclopædia*, the *Introduction* to *Geography* by *William Sanſon*, the *General Geography* of *Varenius*, the *Reformed Geography* of P. *Riccioli*, the *Uſe of the Globes and Sphere* by *Bion*, the *Elements of General Geography* by *Liebknecht*, the *Practical Geography* of *Chamereau*, the *Introduction to Coſmography* of *Marchetti*, &c.

Of theſe, the Introduction of *Sanſon* is the only one that treats of Geography by dividing it into Species, tho' not in ſo full a manner as we have done. Beſides, it is confined chiefly to the Explanation of the Terms, not meddling with the

the practical Part. *Varenius* has mixed his Work with Phyſiological Matters. The Practical Geography of *Chamereau*, tho' ſhort, is very fit for Learners. *Bion* affords a good Inſight into the Science. *Carpenter*, *Liebknecht*, and the reſt, enter deeper into it; but the Geography of *Riccioli* by far exceeds any thing of the kind hitherto done: For, beſides treating fully of the ſeveral Matters of General Geography, it gives the Reader a Hiſtory of each, with the Opinions of the beſt Authors on every Subject, as well as the Titles of the Books written by them. What makes it the more valuable, and indeed ineſtimable, is, that it contains a Collection of almoſt all the aſtronomical and magnetical Obſervations for the Service of Geography that were made before his Time; from whence, in conjunction with Itineraries, he ſettled the Situations of a great Number of other Places of the Earth.

This is a noble Fund for correcting and improving the Maps; and from the Account given of it (a), the *New Introduction to Geography*, ſo often and ſo long promiſed by the late M. *William de l'Iſle*, but ſtill unpubliſh'd, appears to contain Materials of the ſame Kind, with the Addition of all the new Obſervations ſince the Time of P. *Riccioli*.

SECT. II.

Of Special SYSTEMS.

Defin. A Special Syſtem has its Name, as containing a Treatiſe of Special Geography.

It treats of the ſeveral Parts of the Earth in a regular Series: Whence this ſort of Deſcription is commonly called a Body of Geography, to intimate the Compactneſs as well as Completeneſs of the Performance: It is for the ſame Reaſon, that a Syſtem bears the Name of Geography among us; ſo we ſay, the Geography of *Ptolomy*, *Sanſon*, &c. which Appellation is not given to a *Dictionary*.

End. The End of Syſtems is not to give a bare Deſcription of the Earth; but to do it ſo completely, that a Repreſentation thereof may be drawn from them. This was one of the chief Views that *Ptolomy* had in writing his Geography; ſince, as he tells us, he never had undertaken the Work, if he had not found it impracticable to draw a Repreſentation of the Earth from the Syſtem of *Marinus Tyrius* (a), the moſt eminent Geographer of that Age: And indeed how can it be call'd a Body of Geography, if it fails in that eſſential Point? *Ptolomy* farther ſhews the Neceſſity of this Rule, from the Errors that ariſe in Maps from the continual Copying (b).

(a) See Mem. pour ſerv. Hiſt. des Hommes illuſtr. Vol. 10. p. 50.

The firſt Geographical Treatiſe we have an Account of, is that Book made by *Joſhua*'s Order containing the Chorography of *Canaan*; which was divided into 7 Parts, and deſcribed according to the Cities (c). The Account which is given of the Portions of the Tribes (d), ſeems to be an Extract from it; altho' the Original is by ſome ſuppoſed to have been a Map, as we before obſerved.

Hiſt.

Among the *Greeks*, *Homer* is confeſs'd by *Hipparchus* to have been the firſt who treated of Geography in his Writings, or had any Skill that way (e). Afterwards, as the Science advanced by the Study of the Philoſophers at home, and their Travels abroad, regular Syſtems were written: New Diſcoveries, either in the Theory or Practic Part, produced new Treatiſes; and thus Syſtems improved and multiplied.

The *Greeks* wrote a great many Syſtems, whereof the moſt remarkable were thoſe of *Hecatæus Mileſius*, *Hellanicus Lesbius*, *Damaſtes Cittienſis*, *Democritus Abderita*, *Eudoxus*, *Timoſthenes Rhodius*, and his Tranſcriber *Eratoſthenes*; *Hipparchus*, *Scymnus Chius*, *Poſidonius*, *Strabo*, *Marinus Tyrius*, and his Improver *Ptolomy*, *Artemidorus Epheſus*, and his Abridger *Marcianus Heracleota*.

But of theſe none remain, excepting thoſe of *Scymnus Chius*, *Strabo*, *Ptolomy*, *Dionyſius* and *Marcianus*; nor any of the ſpecial Syſtems of the *Romans*, but thoſe of *Pliny*, *Mela*, *Solinus* and *Æthicus*.

Special Syſtems are common among the *Arabs*, *Perſians* and *Turks*, whereof that of the *Arabian* or *Nubian Geographer* (*A*),

and

(a) *Ptol.* Geogr. Lib. 1. C. 6. (b) C. 18. (c) *Joſh.* xviii. 4, 6. 8, 9. (d) Ibid. (e) *Strab.* Lib.

(*A*) The *Arabic* Copy of this Book, printed at *Rome*, goes by the Title of *The Arabian Geographer*; and the *Latin* Verſion by that of *The Nubian*. It is only an Abridgment of *Al Edriſi*; an intire Copy of which, with a *Latin* Verſion, is a-

mong

and part of *Abu'lfeda*, hath been publiſh'd, with a *Latin* Verſion (*B*).

After the time of *Ptolomy*, many ſpecial Syſtems were written by the *European* Geographers; as appears from *Jornandes*: who ſays, in his time innumerable Writers were extant, who explained the Poſitions of Places, and the Dimenſions of *Europe*, *Aſia* and *Africa* (a); and from the great Number of them quoted by the Geographer of *Ravenna*, in the 7th Century, tho' none but his own has come down to us. From that time we meet with none till the Revival of Learning in the 15th Century: But ſince then Syſtems have multiplied exceedingly; the moſt conſiderable of which are, the *Coſmography* of *Munſter*, the Deſcription of the *Univerſe* by *Davity*, the Atlas of *Mercator*, *Janſſon* and *Blaew*, the Coſmography of *Heylin*, the *Deſcription of the whole Univerſe* by *N. Sanſon*, the *Univerſal Geography* of *Noblet*, the *Eaſy Method of learning Geography* by *Robbe*, the *Deſcription of the Univerſe* by *Mallet*, the *New Geography* of *Martineau du Pleſſis*, *Morden*'s *Geography*, the *Geographical Grammar* of *Gordon*, the *Introduction to Geography* of *Luytz*, the *Complete Geographer*, with the *Atlas Geographus* and *General Atlas* of *Ridpath*.

Altho' the Subject of ſpecial Syſtems is properly confined to Special Geography, yet to the Books of this kind there is uſually prefix'd a ſhort Treatiſe of General Geography.

The moſt antient Syſtems, if we may judge by the Fragments which remain, were purely Geographical; containing little more than the Names of Places, with the Diſtances, and ſuch other Circumſtances as might be neceſſary for aſcertaining the Situation thereof. Afterwards, by degrees, they began to mix Hiſtory with their Geography. At firſt they did it but ſparingly, as appears by the Fragments of *Dicearchus* (b). The Works of *Hecatæus Mileſius*, *Damaſtes*, *Democritus*,

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(a) *Jornan.* de *Getic.* Gent. Orig. in Init. p. 79. (b) Ap. *Hudſon* Geogr. Vet. Græc. Min. Vol. 1.

mong the Manuſcripts of Dr *Pocock* and the *Bodleian* Library (*a*). There is alſo an *Arabic* Copy of *Calcaſhendi*'s Deſcription of *Egypt*, with a *Latin* Tranſlation, among the *Seldenian* Manuſcripts.

(*B*) The intire Geography of *Abu'lfeda* is, we are told, now printing at *Oxford* by Mr *Gagnier*.

(*a*) Vid. *Bernard*. Vet. Math. Synopſ. p. 34. *Huntingtoni* Epiſt.

critus, *Timoſthenes*, copied by *Eratoſthenes*, *Eudoxus Rhodius*, and others, were probably of the ſame kind; but *Agatharchides*, who came after them, ſeems to have excluded the Geographical Part almoſt wholly out of his Works, and *Strabo* has retained but little of it in compariſon of Hiſtory.

This Author ſeems to conſider Philoſophy as the moſt eſſential Part of Geography; and a Syſtem as the Theatre, wherein the Philoſopher was to diſplay all his Erudition: For he obſerves, that the Knowledge of innumerable Particulars, by which alone one will be able to execute the Part of a Geographer, belongs only to him who is inſtructed in Divine and Humane Things (a). He obſerves alſo, that the firſt who treated of Geography were Philoſophers (*A*); and blames *Eratoſthenes*, for that he oftener handles thoſe things which belong to Mathematical Geography than to Knowledge (b): Which nevertheleſs, as a learned Author remarks, are rather Commendations on *Eratoſthenes*, as obſerving ſome Bounds in what related to Hiſtory (c).

But herein, doubtleſs, *Strabo* has carried things too far; and it is probable the major Part of Writers adhered ſtrictly to Geography, as it appears the beſt of them did. *Ariſtotle* did not approve of that laborious Mixture of Natural and Civil Matters with the Geographical: *Theophraſtus* follow'd his Example in treating of things ſeparately, and *Dicearchus* ſeems to have follow'd that of his Maſter *Theophraſtus* (d). The Geography of *Artemidorus*, who was Contemporary with *Agatharchides*, had no Mixture of Hiſtory in it, if we may judge by the Fragment of its Abridgment by *Marcian*, who prefers him to *Strabo* (e).

(a) Vid. *Strabo*, L. 1. p. 1. (b) Lib. 2. (c) Vid. *Conring.* Epiſt. 55. p. 408. (d) Id. ibid. (e) Ap. *Hudſ.* ubi ſupr. vol. 1.

(*A*) From theſe and the like Paſſages Madam *Dacier* took occaſion to advance, that Geography is the Daughter of Philoſophy; and that *Plutarch* calls the Geographers Hiſtorians, only becauſe Geography is the Daughter of Philoſophy, and includes a conſiderable Part of Hiſtory. But it does not appear that the Philoſophers, who firſt took Geography into their Care, treated it in a philoſophical Manner. And, indeed, the forming the Science ſeems chiefly to have been the Deſign of the firſt Philoſophers, after the Example of *Anaximander*, whoſe Steps *Hipparchus*, *Artemidorus Epheſius*, *Marinus Tyrius*, *Ptolomy*, and others, followed. Geography therefore may be call'd the Offſpring of Philoſophers, but not of Philoſophy, at leaſt in the Senſe Madam *Dacier* would have it.

Towards the Middle of the 2d Century, *Marinus Tyrius*, and his Improver *Ptolomy*, reſtored the Purity of Geographical Syſtems, by intirely excluding Hiſtory.

This Work of *Ptolomy* ſeems to have been the *Ne plus ultra* of the *Greeks:* The Geographers afterwards employing themſelves chiefly in abridging, collecting, and methodizing the Works of their Predeceſſors in the Science, after the manner of *Agathemeres* (a), and *Marcian* of *Heraclea* (b).

Geographical Syſtems of the *Romans* which remain, as thoſe of *Mela*, *Pliny* and *Solinus*, ſeem rather Hiſtorical than Geographical Treatiſes. However, the Memoirs of *Marcus Agrippa*, much quoted by *C. Pliny*, were of another kind; ſupplying Materials for making a Map of the World (c). Theſe Memoirs were probably collected from thoſe of the three learned Surveyors, who meaſured the *Roman* Empire (d). The Syſtems of the *Arabs* and *Perſians* are for the moſt part Geographical; ſuch as thoſe of *Ebn Hawkal*, *Al Edriſi*, (of which that publiſh'd in *Arabic* and *Latin* under the Name of the *Nubian Geographer* is an Abridgment) *Abu'lfeda*, *Calcaſhendi*, and others. And generally in the Oriental Syſtems, where Hiſtory is introduced, the Geography is carefully purſued, as in the *Chineſe* Atlas publiſh'd by P. *Martini*, and the *Turkiſh* Geography of *Hâteb Chelebi*, intituled *Jehân Numâ*, a Manuſcript lately ſent from the *Levant*.

Upon the Revival of Literature amongſt the *Europeans*, the Geographers were chiefly taken up in commenting on *Ptolomy*, and writing Works which were purely Geographical; but they ſoon fell into the other Road. *Munſter* firſt introduced all ſorts of Hiſtory into Syſtems; and to ſuch Exceſs, that he is blamed even by thoſe who approve of ſuch Mixtures. *Davity*, *Thevet*, *Janſſon*, amongſt the *French*, follow'd his Example: *Blaew*, *Dapper*, *Luytz*, and others amongſt the *Germans* and *Dutch*. In *England* we have our *Heylins*, *Ogilbys*, and moſt others of the Moderns, whoſe Works contain little elſe beſides the Hiſtory of Nations and Places. Even ſome of the moſt eminent of the Geographers, as *Ortelius*, *Mercator*, &c. have fallen too much into this Fault, for which they are blamed by *Conringius* (e): But the Majority of the Learned and Induſtrious ſort have ſtuck cloſer to the Geography,

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(a) Ap. *Hudſon* ubi ſupr. Vol. 2. (b) Ibid. Vol. 1. (c) *Plin.* Hiſt. Nat. Lib. 3. c. 2. (d) Vid. *Æthic.* Coſmog. Pref. (e) *Conring.* Epiſt. ubi ſupr.

graphy, ſuch as *Sanſon, Brietius, Cellarius, Reland,* and others.

Conringius, than whom few have had a better Notion of Geography, diſtinguiſhing between Mathematical and Hiſtorical Geography, ſays this latter does not properly belong to Geography, but ought to be treated apart, according to the Example of the moſt Antient Geographers (a).

Varenius declares, that political Deſcriptions of Countries have no relation to the Subject; and that Mathematicians inſert them only to excite and allure the Attention of the (b) Reader (*A*).

Sanſon alſo, in effect, excludes Natural and Civil Hiſtory from having any ſhare in Geography (c): And tho' *Gordon* has introduced it in his Analyſis for the Benefit of Learners, yet he obſerves, that Hiſtorical Narrations, tho' commonly making the largeſt and moſt pleaſant Part of Geographical Tracts, are rather the Fringes of Geography, than its real or eſſential Parts (d). In ſhort, nothing is more obvious than this, ſince Hiſtory was never reckon'd by the Antients or Moderns amongſt thoſe Sciences from whence Geography draws its Principles, which are purely Mathematical: Nor does Hiſtory enter into the Compoſition of Globes and Maps, whereby Geography is completely exhibited.

However, what is here ſaid is not wholly to condemn the Practice of introducing Hiſtory into Syſtems; but to give a Check to the Abuſe of it, by letting Writers of Syſtems ſee it is no part of the Science, and conſequently ought to be introduced ſparingly, and without Prejudice to the Geography, which ſhould always be conſider'd as the chief Deſign. When this Caution is duly obſerved, Syſtems will be the better for a Mixture of Hiſtory.

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(a) Vid. *Conr.* Epiſt. ubi ſupr. (b) *Varen.* in Dedic. Deſc. Reg. Japan. (c) *Sanſon*, Introd. a la Geogr. p. 6. *Ozan*. Dict. Math. p. 331. (d) *Gordon*, Geogr. Gram, p. 2.

(*A*) Hæc ſunt tria affectionum genera in Speciali Geographia explicanda, [nempe Terreſtria, Cæleſtia & Humana, quæ ad incolas cujuſvis Regionis ſpectant] etſi illæ, quæ tertiam claſſem faciunt, minus recte ad Geographiam referantur: Sed dandum eſt aliquid conſuetudini, & utilitati, diſcentium (*a*).

(*a*) *Varen*. Geogr. Gen. Lib. I. c. I. p. I.

Conſtit. Parts. The things to be conſider'd in Syſtems relate to, 1. The Exhibitory Form. 2. The Species of Geography introduced. 3. The Deſcription, or Materials employ'd. 4. The Method of dividing or ranging the Parts of the Deſcription. 5. The Accompaniments. 6. The Style and Title of the Work. 7. The Proportion obſerved in the Parts and the Whole.

Exhibit. Form. I. The Manner of Exhibiting employ'd in Explanatory Syſtems is either pure or mix'd. The pure Manner conſiſts ſolely in exhibiting by Treatiſe or Diſcourſe: The mixt, in adding ſome other Manner to it. Thus ſome Syſtems exhibit by Diſcourſe and Tables, as thoſe of *Abu'lſeda*, *Sanſon*, and his Followers; ſome by Diſcourſe and Maps, as thoſe of *Cluver*, *Heylin*, *Morden*; others by Diſcourſe, Tables and Maps, as the Syſtems of *Sanſon*, *Noblot*, *Robbe*, *Luytz*, *Gordon*, the *Complete Geographer*, &c.

But here we ſhall conſider Explanatory Syſtems only in the pure Light abſtracted from Tables and Maps; which belonging to other exhibitory Species, may be look'd on only as Auxiliaries, and rank'd among the Accompaniments.

Species. II. With reſpect to the Species of Geography, 1. Some Syſtems contain the Natural and Civil Geography; as in general all the Antients, with moſt of the Moderns. Others Eccleſiaſtical Geography, as the *Geographia Sacra* of *Carolus a Sancto Paulo*, the *Tables Geographiques*, &c. of *Commanville*. 2. Some conſiſt of Antient Geography, as thoſe of *Ptolomy*, *Strabo*, *Mela*, *Cellarius*. Some the Middle Geography, as that of the Geographer of *Ravenna*, *Geographia Nubienſis*, *Abu'lſeda*, &c. Others the Modern, as the Syſtems of *Morden*, *Gordon*, *Robbe*, *Martineau du Pleſſis*, &c. 3. Some give a Parallel Geography of Antient, Middle and Modern, as thoſe of *Heylin*, *Brietius*, *Sanſon*, *Luytz*, the *Atlas Geographus*, the *Complete Geographer*, *Echard*, *Wells*, &c. Other Syſtems mix a Critical Geography, as thoſe of *Brietius*, *Cellarius*, and a few more.

Quality of Matt. III. Syſtems differ with reſpect to the Quality of the Matter whereof they are compoſed. (1.) Some are wholly Geographical, as thoſe of *Ptolomy*, *Cellarius*, and a few more; others are moſtly Hiſtorical, as the Syſtems of *Strabo*, *Mela*, *Solinus*, *Munſter*, *Davity*, *Heylin*, *Gordon*, *Luytz*, the *Complete Geographer*, *Sanſon* and his Imitators, *Mallet*, *Robbe*, *de la Croix*, *Martineau*;

niau; and in ſhort all the reſt. (2.) Some Syſtems mark only the Poſition of the Countries, and Dimenſions of Provinces; as thoſe of *Echard*, *Gordon*, *Robbe*, *Martineau*, &c. (3.) Some give the Diſtances, either more perfectly by way of Roads or Itineraries, as thoſe of the Orientals, particularly in *Arabic*, under the Title of *al Maſſâlik wa al Mamâlik*, that is, *Roads and Kingdoms*, written by *Ebn Hawkal*, *Ebn Khordadbeba*, *Mahlabi*, *Marrakeſhi*, *al Edriſſ*, and his Abridger commonly call'd the *Nubian Geographer*; or elſe imperfectly, or without keeping up a due Communication between Places, as the Syſtems of *Strabo*, *Pliny*, *Heylin*, the *Notitia Orbis Antiqui* of *Cellarius*, the *Atlas Geographus* of *Ridpath*, the *Complete Geographer*, and generally all the Modern Syſtems written by *Europeans*.

(4.) Some Syſtems are regulated by Aſtronomical Obſervations, as the *Atlas Cœleſtis* of *Andrew Cellarius*. The *Atlas Univerſalis* of *Clauſea*, not yet publiſh'd, is propoſed to take in all the Obſervations extant, as the *Geographia Reformata* of P. *Riccioli* does to the Time it was printed: In the *Geography* of *Ptolomy* the Situations are exhibited according to Longitude and Latitude.

(5.) In ſome Syſtems the Situations are marked by Longitude and Latitude as well as Diſtances, as in the *Takwîm al Boldân* of *Abu'lfeda*.

Diviſion of the Work.

IV. Syſtems are uſually divided into two Parts, the firſt containing the general, the ſecond the ſpecial Geography.

Authors agree pretty nearly in the manner of treating of general Geography, but they differ much in modelling the ſpecial Part; Syſtems having nothing in their Nature to fix the Order of Countries in the Deſcription, like Globes and Maps.

In treating of ſpecial Geography, regard is had to the Manner of dividing the Work into Parts, and the Manner of ranging the Parts.

Manner of dividing

1. The Manner of dividing Syſtems into Parts is twofold, Climatical and Civil.

— *by Climates.*

[1.] In ſome Syſtems we find a kind of Aſtronomical Diviſion of the Earth, according to the ſeven Climates of the Antients. Each of theſe Climates is divided into ten Parts; and in the Deſcription this Diviſion is follow'd, without any regard to that into Quarters and Countries, farther than the Nature of the other will allow. The Deſcription begins with the firſt Climate, commonly in the Weſt, and proceeding gradually thro' all the ten Parts, goes on to the ſecond Climate; and in this manner proceeds thro' all the ſeven. This is the Diviſion according to which the Earth is deſcribed in the *Nubian Geographer*, and moſt of the *Arab* and *Perſian* Syſtems (a), eſpecially the more antient; as thoſe of *Ebn Hawkal*, *Ebn Khordadbeba*, *Marrakeſhi*, and perhaps all thoſe written under the Title of *al Maſſâlik wa al Mamâlik*, that is, Roads and Kingdoms. Now in regard it often happens that the ſame Country lies in two different Climates, in conſequence of this Method the Deſcription will be broken, and diſtributed into different Parts of the Work: For inſtance, the *Nubian Geographer*, after having deſcribed the lower Part of *Spain*, which lies in the firſt Part of the fourth Climate (b), goes on deſcribing Pieces of Countries all the way to the Eaſtern Coaſts of *China* before he returns to *Spain* again, the reſt of it lying in the firſt Part of the fifth Climate (c). How the Orientals came to fall into a Method ſo truly abſurd and prepoſterous, is not eaſy to determine; ſince we find no Example of the kind among the *Greeks* (*A*), whom in every thing elſe they copied. Yet this Method, or at leaſt the Name of Climate, ſeems to have been ſo ſacred to them, that *Abu'lfeda*, dividing his Work according to the Countries, gives to each the Name of a Climate; adding twenty eight known Climates (as he calls them for Diſtinction-ſake) to the ſeven true.

— By the Civil Diviſions.

[2.] The Generality of Syſtems are divided, according to the civil Diviſions of the Earth, into Quarters; and thoſe again into Empires, Kingdoms and States. The Coſmography of *Æthicus* alone employs a ſort of Hydrographical Diviſion, according to the four Oceans.

(a) See *Renaudot*, Ant. Relat. Pref. p. 5. (b) Vid. Geogr. Nub. p. 147. (c) Ibid. p. 215.

(*A*) We cannot imagine upon what Ground *Renaudot* aſſerts, that in dividing their Syſtems by Climates the *Arabs* follow the Method of *Ptolomy* (*a*); as if he was ignorant that *Ptolomy* deſcribes the Earth according to the Countries. *Eratoſthenes*, who ſeems firſt to have introduced the Climates, doubtleſs only added them in the general Part, ſince we are told that in the ſpecial Part he copied *Timoſthenes* verbatim (*b*).

(a) *Renaud.* Anc. Relat. Pref. p. 5. (b) Vid. *Martian. Heracl.* p. 63. ap. *Hudſon*, Geogr. Græc. vet. Vol. 1.

In ſome of the antient Syſtems, particularly thoſe of *Strabo* and *Ptolomy*, the Quarters are divided into large Regions or Countries, each of which contains ſeveral Kingdoms.

Order of ranging.

2. The Order of ranging the Parts of the Earth in Syſtems, according to the civil Diviſions, relates to the Quarters, the Countries in each Quarter, and the Provinces of each Country.

—The Quarters.

[1.] With regard to the Diſpoſition of the Quarters, ſome Syſtems begin with *Europe*; as thoſe of *Strabo*, *Ptolomy*, *Heylin*, *Morden*, *Gordon*, *Martineau du Pleſſis*, and moſt of the other Geographers antient and modern. 2. Some with *Aſia*, as the *Compendium* of *Vadian*, and *Introduction* of *Sanſon*. 3. Some with the unknown Arctic Lands, as the *Deſcription de l' Univerſe* of *Manaſſon Mallet*. 4. Some with *America*, as *Le Prudent Voyageur* of *du May*. 5. Some with *Africa*, as the Geography of *Mela*, the *Nubian* Geographer, and moſt of the other Oriental Syſtems divided into Climates.

[2.] In ranging the Countries in the reſpective Quarters, 1. Some Syſtems begin with thoſe in the Weſt: Thus, the *Coſmography* of *Heylin*, and *Compendium* of *Eachard*, begin with *Spain*; the *Methode* of *Martineau* with the *Britiſh* Iſles in *Europe*; the *Introduction* of *Sanſon* begins with *Aſia Minor*; the *Maſſâlik wa Mamâlik* of *Ebn Hawkal*, and *Takwîm al Boldân* of *Abu'lfeda*, with *Arabia* in *Aſia* (*A*); the *Nubian* Geographer with the Weſtern Parts of *Africa*, or *Negroland*. 2. Some with the Northern Countries, as the Analyſis of *Gordon* begins with *Sweden* in *Europe*. 3. Some with thoſe in the Eaſt; ſo the *Modern Hiſtory* of *Salmon* begins with *China* in *Aſia*.

[3.] As to the Diſpoſition of the Provinces, in moſt Syſtems they are deſcribed in a direct Series from Weſt to Eaſt, or from North to South, like the Countries themſelves. But *Mallet*, in his *Deſcription de l' Univerſe*, abovemention'd, obſerves a Method peculiar to himſelf; for beginning at the North, he winds round by the Eaſt and South, and ends in

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(*A*) *Ebn Hawkal* began with *Arabia*, becauſe the Temple of the Prophet was there; and is follow'd by *Abu'lfeda*, contrary to the Practice of all other Geographers, who begin at the Weſt (*a*), or Coaſts of *Africa* on the *Atlantic* Sea.

(*a*) *Greaves*'s Pref. ad *Abu'lfed.* Deſcr. Choraſm. & Mawar. p. 11. ap. *Hudſon*, Geogr. vet. Minor, Vol. 3.

in the Weſt: Thus to run along the Frontiers, and advance inſenſibly into the Heart of Countries, he judges to be the beſt Courſe for helping the Memory.

Accompaniments. V. The Accompaniments belonging to Syſtems are Maps and Cuts, Tables and Indexes: By means of which laſt, they ſerve alſo for Dictionaries. So that all the three exhibitory Terms, *Repreſentatory*, *Explanatory* and *Tabular*, may be ſaid ſometimes to meet in Syſtems.

— Maps. [1.] Maps are ſometimes adapted to the Deſcription; as thoſe belonging to the Geographies of *Ptolomy*, *Sanſon*, *Morden*, *Cellarius*. Some diſagree with the Deſcription; ſuch as thoſe inſerted in the Syſtems of *Martineau*, the *Complete Geographer*, the *Atlas Hiſtorique*, and many others.

— Cuts. [2.] 1. Some Syſtems have Cuts of the Inhabitants, as that of *Noblot*, &c. 2. Some include Variety of all ſorts, relating to People and their Cuſtoms, Monarchs and their Courts, Religious Ceremonies, Animals, Vegetables, Plans and Proſpects of Cities, Battles, Sieges, and the like; ſuch are the Syſtems of *Dapper* and his Tranſlator *Ogilby*, the *Atlas Hiſtorique* of *Gueudeville*, and *la Galerie* of *Vander Aa*. Theſe two laſt conſiſt more of Maps and Cuts, than written Remarks; and the *Abbe Dangeau*, in his *Nouvelle Methode de Geographie Hiſtorique*, propoſes to exhibit the Deſcription wholly by Maps and Cuts, accompanied with marginal Explanations.

— Tables. [3.] Geographical Tables, found in Syſtems, are of two ſorts: 1. Tables of Diviſion, ſuch as are given by *Sanſon* and his Followers, *Noblot*, *Robbe*, *de la Croix*, *Luytz*, *Gordon*, the *Complete Geographer*, &c. 2. Tables of Longitude and Latitude, whereof half the Geography of *Abu'lfeda* is compoſed.

— Indexes. [4.] Moſt Syſtems have Indexes, and ſome very good ones, as that of *Martineau*, publiſh'd by the Abbey *du Freſnoy*, under the Title of *Methode pour etudier la Geographie*; the *Orbis Antiquus* of *Cellarius*; the *Complete Geographer*, &c.

— Style. VI. Syſtems may be conſidered on account of the Style wherein they are written, and the Titles given them by their Authors.

1. With regard to Style, Syſtems are for the moſt part written in Proſe, either by way of Narration, wherein only

a ſingle Perſon ſpeaks; as the Syſtems of *Strabo*, *Sanſon*, *Cellarius*, *Morden*, and in general all, excepting a very few: Or elſe by way of Queſtion and Anſwer, or Dialogue between two Perſons; as *la parfait Geographie* of *la Cocq*, the *Short Way to know the World*, and the Abridgment of *Hubner*. 2. Some are written in Verſe, as the Deſcription of the Univerſe by *Dionyſius Corinthiacus*; the *Periegeſis* of *Dionyſius* of *Charax*; the *Deſcription of the Earth* by *Priſcian*, in *Greek*; the *Geography* of *Alypius*; the *Deſcription of the Earth* by *Rufus Feſtus Avienus*; the *Geography* of *Berlinger*; the *Synopſis* of *Aſtronomical Geography* by *Mathiou*, in *Latin*; the *Introduction* of *Violer*, in *French*. 3. Some both in Verſe and Proſe; as, the *State of Greece* by *Dicearchus*, in *Greek*; and the *Coſmographia Proſometrica* of *Ritter*, in *Latin*.

Titles.

[2.] The Titles of Syſtems are various, and may be conſider'd in ſeveral Lights, either as they are ſingle or double, comparative or alluſive, given out of Oſtentation, or to expreſs ſome Property of the Work.

1. Some Titles are ſingle, as the *Deſcription de l' Univerſe*, by *Mallet*. 2. Some double, as the *Nouvelle Geographie*, *ou Deſcription exacte de l' Univerſe*, of *Martineau*; *Geography anatomized*, or the *Geographical Grammar* by *Gordon*, and moſt others. 3. Some are comparative, as the *Hercules Siculus* of *Nicoloſius*; the *Mercurius Coſmicus* of *Schroter*; the *Atlas Geographus* (if it ſhould not rather be *Geographicus*) of *Ridpath*. 4. Some alluſive; as, the *Faſciculus Geographicus* of *Quadi*; the *Theatres* of *Ortelius*, *Bertius*, *Bouſſingault*; the *Amphitheatridion*, or *Little Theatre* of *Boterus*; the *Molhtarak*, or *Theſaurus*, of *Yakut al Hamâwi*. 5. Some are given out of Oſtentation, or to help the Sale; as, *The Complete Geographer*; *The Perfect Geographer* by *la Cocq*; *The Light of the World*, *and the cover'd Tops of* Atlas *uncover'd*, by an anonymous Author. 6. Titles are often adapted to the Quality of the Work: *Firſt*, Some expreſs the Species of Geography treated of; as the *Geographia Antiqua* of *Cellarius*; the *Modern Geographies* of *Martini* and *Martineau*; the *Introduction to Antient and Modern Geography* of *Luytz*; the *Sacred Geographies* of *Bochart*, *Sanſon*, and *Carolus a Sancto Paulo*; the *Antient Sacred and Prophane Geography* of *Hornius*; the *Hiſtorical Geographies* of *de Bourgon*, *Reſuge* and *Dangeau*; the *Parallels of Antient and Modern Geography* by P. *Brietius*. *Secondly*, Some expreſs the Bulk or Compaſs of the Work; as the *Breviariums* of *Lillius* and *Bertius*; the *Compendiums* of *Golnitz* and

Echard; the Enchiridion of *Favolius Gallæus*; the *Epitome's* of *Vadian, Farneſius*, &c. the *Iſagoge* of *Nicoloſius*; the *Sceletons of Schævius* and *Statilius*; the *Synopſis's* of *Gotlenius* and *Schulter*. 3. Some are adapted to the End and Uſe; as, the *Introduction* of *Blancanus* and *Cluver*; the *Speculum Orbis's* of *Dan. Cellarius* and *Metellus*; the *Grammar* of *Gordon*; the *Moral Geography* of *Bartoli*; the *Luſus*, or *Paſtime* of *Kirckhoffer*; the *Relaxation of a curious Mind*, by the *Nubian Geographer*; and the *Methods for ſtudying Geography*, publiſh'd by ſeveral Authors.

Proportion

VII. The Proportion obſerved in Syſtems, may be conſider'd with regard either to the Parts, or the Whole.

—of Parts.

1. With reſpect to the Proportion of the Parts; *1ſt*, In moſt Syſtems *Europe* includes more than the other 3 Quarters, as in the *Complete Geographer*, the *Nouvelle Geographie* of *Martineau*. *2dly*, In ſome, the Deſcription of a ſingle Kingdom contains more than a whole Quarter: Thus, in the *Notitia Orbis Antiqui* of *Cellarius*, *Germany* is equal to *Africa*; and in the *Nouvelle Methode* of *de la Croix*, which conſiſts of 5 Volumes in Octavo, *France* takes up all the ſecond, whilſt *Aſia*, *Africa* and *America*, are ſqueezed into the fifth. In the *Methode* of *Robbe*, *France* ingroſſes two thirds of the Whole.

The like Diſproportion is found with reſpect to Maps; *1ſt*, Some Syſtems contain particular Maps of the Countries of *Europe*, and only general ones of *Aſia*, *Africa* and *America*, as the *Geographical Grammar* of *Gordon*, *du Freſnoy*'s *Methode*, &c. *2dly*, In others, ſome particular Kingdom is illuſtrated by many Maps, whilſt the reſt are allowed only one apiece. Thus in the *Nouvelle Methode* of *de la Croix*, no leſs than 18 Maps are employ'd in the Deſcription of *France*.

— of the Whole.

2. As to the Proportion obſerved in the Whole, Syſtems are of various Sizes. *1ſt*, Some in Twelves, as the *Compendium* of *Echard*, and *Introduction* of *Cluver*; ſome in Octavo, as *Ptolomy* and *Gordon*; ſome in Quarto, as *Morden*; others in Folio, as *Strabo*, *Munſter*, *Heylin*, and the *Complete Geographer*. *2dly*, Some are in ſeveral Volumes of the ſame Size, as the *Nouvelle Geographie* of *Martineau*, in 3 Vol. Duodecimo, to which *du Freſnoy* in his Edition has added a 4th; the *Methode* of *de la Croix*, and the *Geographie Univerſelle* of *Noblet*, in 5 Volumes; the *Notitia Orbis Antiqui* of *Cellarius*, in 2 Volumes Quarto; the *De-*

Deſcription de l' Univerſe by *Mallet*, and the *Atlas Geographus*, in 5 Volumes each. *3dly*, Some Syſtems ſwell to unreaſonable Bounds, *Le Monde* of *Daviti* to 6 thick Volumes in Folio; the *Atlas Major* of *Janſſon*, and *Le grand Atlas* of *Blaew*, each to 12 very large Volumes. The *Atlas Univerſelle* propoſed by *Clauſea* is to conſiſt of 45; but *La Calerie agreable du Monde*, publiſh'd by *Vander Aa*, extends to no leſs than 60 folio Volumes.

'Tis true, Geography has the leaſt Concern in moſt of theſe monſtrous Collections: For was the Hiſtory, with all the faulty Materials expunged, the good Geography contained in the beſt of them would lye in the Compaſs of one of the Volumes; and that of ſome in the 10th Part of a Volume, perhaps in a Nutſhell.

CHAP. V.

Of Geographical DICTIONARIES.

Etym. A Geographical Dictionary has its Name from the Arrangement of the Articles being made according to the Order of the Words or Names, and not of the Matter. The Term comes from the *Latin*, *Dictionarium*, of the ſame Signification with *Lexicon* in *Greek*: Which Name is alſo given to Books of this ſort; as likewiſe that of *Onomaſticon*, for the ſame Reaſon.

Tho' Geographical Dictionaries contain a Body of Geography as well as Syſtems, yet they are not uſually named Geography, becauſe the Deſcription made in that Form is not regular and ſcientifical. Every Article makes a Whole by itſelf, independent of the reſt: So that it may be called a Collection of particular *Chorographies* and *Topographies*, rather than a *Geography*. However ſome have thought otherwiſe; for inſtance, *Miræus* entitles his Geographical Dictionary an *Eccleſiaſtical Geography*.

End. The End of Geographical Dictionaries is, to furniſh a Reader readily with the Explanation of any Term or Deſcription of any Part of the Earth he wants to be informed of: Whence Books of this kind are of great Aſſiſtance to Men of Learning, as well as Students.

Liſt. Geographical Dictionaries had doubtleſs a much later Origin than Syſtems; the multiplying of which, together with Hiſtories, ſeems to have given the firſt Occaſion to them. The Antients had many Books of this kind; among the reſt were thoſe written by *Diogenianus*, *Damaſtes Sigeënſis*, *Callimachus Cyreneus*, *Hellanicus*, *Hippia*, *Delia*, *Xenagoras*, and ſeveral others (a). It was cuſtomary with the *Greeks* to treat of the ſeveral Parts of the Earth, by ranging thoſe of a kind together, often in alphabetical Order, like the Book of *Diogenianus*, wherein the Rivers, Lakes, Fountains, Mountains and Capes, were deſcribed in ſeparate Parts of the Work (b). *Plutarch*, in his Book of Rivers, cites no leſs than 14 Authors, who have written on that Subject: But of all theſe, little more than the Names remain. In ſhort, Antiquity has left us no more than three Geographical Pieces of the Dictionary kind, *viz.* that of *Vibius Sequeſter*, digeſted after the manner of *Diogenianus*, abovementioned; the Geographical Index of *Pappus Alexandrinus* annexed to the *Armenian* Hiſtory of *Moſes Khorenenſis* (B); and *Stephanus Byzantinus de Urbibus*, or rather the Abridgment of it by *Hermolaus*.

The *Orientals*, during the middle Age, compoſed plenty of Geographical Dictionaries, tho' none of them as yet have come to our Hands: But the *Europeans*, from the Time of *Stephanus*, did little or nothing that way till of late Ages. *Boccacio* firſt broke the Ice, by publiſhing a ſmall Work, not unlike that of *Vibius Sequeſter*, but ſomewhat more copious. Next *Zacharias Lillio* of *Vicenza*, in the 16th Century, wrote a ſhort Geographical Dictionary, under the Title of *Orbis Breviarium*, and *Paſtregius* another *de Originibus*. *John Wolfius* of *Zurich* made an Index of all the *Greek* Names of Places to be found in *Ptolomy*, *Strabo*, *Pauſanias*, *Stephanus*, *Euſtathius*, and others. *Jo. Francis Quintinianus* promiſed ſomething conſiderable this way, but did not perform. *William Zylander* alſo began a Geographical *Onomaſticon*, but was prevented by Death from executing his Deſign (a). At length *Ortelius* in the ſame Age publiſh'd his *Theſaurus Geographicus*, compiled from Authors of all Sorts and Times, particularly the Antients; wherein, as he tells us (b), he has not omitted one Place mentioned by any of them. Since his Time, ſeveral copious Geographical Dictionaries have been publiſhed, as the *Lexicon Geographicum* of *Ferrari* in 1628, and *Baudrand* in 1670 and 1682, the Geographical Dictionary of *Bohun* in 1688, improved by *Bernard* 1693; that of *Maty* in 1701, another of *Baudrand* in 1705, that of *Cornelli* in 1708; and, laſtly, the Great Geographical and Critical Dictionary of *Bruzen la Martiniere*, begun to be publiſh'd in *Holland* in 1726, and not yet finiſh'd. To theſe we may add the Geographical Dictionary, or rather Nomenclatura, of *Du Val*, the King of *France*'s Geographer, publiſh'd in 1672; and *Echard*'s *Gazetteer*, or *News-Man*'s Interpreter, publiſh'd at the Beginning of this Century; the *Geographia Eccleſiaſtica* of *Aubertus Miræus* in his *Notitia Epiſcopatuum Orbis Chriſtiani*; the Geographical Table or Index of Biſhopricks at the End of *Commanville*'s *Tables Geographical and Chronological*; that at the End of *Fabricius*'s *Lux Evangelij Orientalis*; and thoſe of Father *Lubin* to *Plutarch*'s *Lives*, the *Roman Martyrology*, *Uſher*'s *Annals*, and other Books.

(a) Vid. *Ortel.* Præf. ad Theſaur. Geogr. (b) Vid. *Suidam* ap. *Ortel* ubi ſupr.

(B) The Hiſtory of *Moſes Khorenenſis* was firſt tranſlated into *French* by M. *Petit de la Croix*, late Interpreter to the King of *France*; and lately into *Latin*, and publiſh'd by the Sons of Mr *Whiſton*. An Abridgment of it, by Father *John Bartholomew de St Hyacinth* was publiſh'd at *Stockholm* in 1723, in Quarto, with Notes of Mr *Brenner* the Editor, under the Title of, *Epitome Commentariorum Moyſis Armeni de Origine & rebus Armenorum & Parthorum. Item Series Principum Iberiæ & Georgiæ*, &c.

Of theſe Dictionaries, *Ferrari*'s is an Improvement of *Ortelius* as to the Modern, but a Depravation of him as to the Antient. *Baudrand*'s was written with a View to correct and ſupply *Ferrari*; *Bohun* is an Improvement of *Du Val*; *Bernard* of *Bohun*, chiefly from *Moreri*; *Maty* of *Baudrand*, as to the Modern Geography, whereof it wholly conſiſts; as does the Edition of *Baudrand* of 1705, compiled for the moſt part by himſelf with the ſame Deſign, but finiſh'd after his Death. *Corneille*'s and *La Martiniere*'s are in a great meaſure new Works, taken immediately from the Geographers and Travellers.

Beſides the Dictionaries expreſsly on the Subject, there are ſeveral miſcellaneous ones, which contain a Mixture of Geographical Articles; as thoſe of *Torrentinus*, *Nebriſſenſis*, *Geſner*, *Rob. Stephens*, and others (c); with the later and more vo-

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(a) Vid. *Ortel.* Pref. ad ſuum Theſaur.

(b) Ibid.

(c) See *Ortel.* ubi ſupr.

voluminous Works of *Lloyd*, *Juigne*, *Moreri* and his Tranſlator *Collier*, *Bayle*, *Hoffman*, and *Dom Calmet*; the *Bibliotheque Orientale* of *D'Herbelot* for the Eaſtern Geography; and the *Geographical, Hiſtorical, and Philological Dictionary*, preparing, if not publiſh'd, by *David Hottinger*.

Conſtit. Part.

The things to be conſidered in Geographical Dictionaries relate either to, 1. The exhibitory Form. 2. The Quality of the Matter. 3. Species of Geography introduced. 4. Accompaniments. 5. Proportion.

---Form.

1. The Method obſerved in ranging the Articles in Geographical Dictionaries is twofold; the firſt, by throwing the Whole into one Alphabet, according to a ſtrict Alphabetical Series throughout the Letters of every Name: Whence it is called by ſome Alphabetical Geography (a), in which Form almoſt all the Dictionaries are digeſted. The ſecond, by dividing the Articles into ſeveral Alphabets, regard being had to the initial Letters only: As in the little Work of *Vibius Sequeſter*, where things of the ſame kind are brought together under certain Heads, as before obſerved; and that of *Jerom, de Locis Hebraicis*, which was originally divided into many irregular Alphabets, according to the Books of Scripture, till *Boneſrerius* reduced them into one regular *Onomaſticon*.

---Matter.

2. With regard to the Quality of the Matter, (1.) Some Dictionaries contain both General and Special Geography, as that of *la Martiniere*, which ſeems to be ſingular in its kind; ſome conſiſt of General Geography only, as thoſe inſerted in *Ozanam's Dictionaire Mathematique*, and *Chamereau's Geographie Pratique*; others comprize Special Geography only, of which kind all the reſt of the Geographical Dictionaries are. (2.) Some are purely Geographical, as the *Theſaurus* of *Ortelius*, Index of *Fabricius*, Table of *Commanville*, Dictionary of *Du Val*, *Echard's Gazetteer*. Others conſiſt of Geography and Hiſtory mixt, of which kind are almoſt all the reſt.

As to the Poſitions of Places, (1.) Some give them in itinerary Meaſures; as thoſe of *Ortelius, Ferrari, Baudrand, Maty*. (2.) Others again mark only the Kingdom, Province or Diſtrict, to which the Places belong: As thoſe of *Vibius Sequeſter, Miræus, Commanville, Du Val*, &c.

(a.) *Sanſon's* Introd. Part 1, L. 4. c. 4. p. 93.

—Species.

3. As to the Kinds of Special Geography introduced: Some Dictionaries contain the Natural and Civil Geography, interſperſed occaſionally with the Eccleſiaſtical, as thoſe of *Baudrand, Bohun, Corneille, la Martiniere*, and moſt of the reſt; ſome only Natural and Civil Geography, as thoſe of *Stephanus Byzantinus, Ortelius*, &c. Others only Eccleſiaſtical Geography, as thoſe of *Miræus, Commanville*, and *Fabricius*. 2 Some conſiſt chiefly of Antient Geography, as *Stephanus Byzantinus*; others of Modern, as *Maty*, the Edition of *Baudrand* in *French*, and *Echard*'s Gazetteer. 3. Some give the Parallel of Antient, Middle, and Modern Geography, as thoſe of *Ortelius, Ferrari, Baudrand, Bernard, Corneille, la Martiniere:* Others mix a Critical Geography; as that of the laſt mentioned Author; on which Account it bears the Title of, *The Great Geographical and Critical Dictionary.*

—Accompaniments.

4. With reſpect to Accompaniments, ſome Dictionaries have a Treatiſe of General Geography prefix'd, as the Edition of *Bohun*, publiſh'd by *Bernard*; Others are accompanied with Tables of Diviſions, as that of *La Martiniere*. Some have Tables adjuſting the Antient with the Modern Geography, as thoſe of *Ortelius, Baudrand*, and *Maty*; others have a Table of Latitude and Longitude annexed, as that of *Bohun* before mentioned. But Authors have not yet attempted to introduce Maps and Cuts into Dictionaries: And indeed they ſeem to be incompatible with that Form of Deſcription; but may be added at the End, or accompany it in a Book apart.

——Proportion.

5. As to Proportion, ſome are in Twelves, as the Gazetteer of *Echard*; others in Octavo, as the firſt Edition of *Bohun*'s Geographical Dictionary; ſome in Quarto, as *Maty*; others in Folio, as *Baudrand, Corneille, La Martiniere, &c.* Some are in one Volume, as *Echard* and *Maty*: ſome in three, as *Corneille*, others in many, as *La Martiniere*, which has already ſwelled to 7 Volumes, tho' he has got no farther than the Letter P.

Plan.

In compoſing a Geographical Dictionary four things are eſſential; (1) to inſert the various Names of each Place in their alphabetical Order, giving the Article under the Name moſt in uſe, and referring thereto from the reſt.

(2) To give the Situations from conſiſtent Authors, and not diſcording Maps, *&c.* (3) To proportion the Parts to the Size of the Work, and neither omit material Articles, nor introduce trifling ones. (4) To keep up a thorough Connection between the Whole and its Parts, by Geographical Tables of the Diviſion of the Earth into Quarters, Countries, Provinces, *&c.* inſerted under their reſpective Articles, as well as by References, that the Reader may be able to trace the Geography of any Country ſo far as contained in the Dictionary.

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